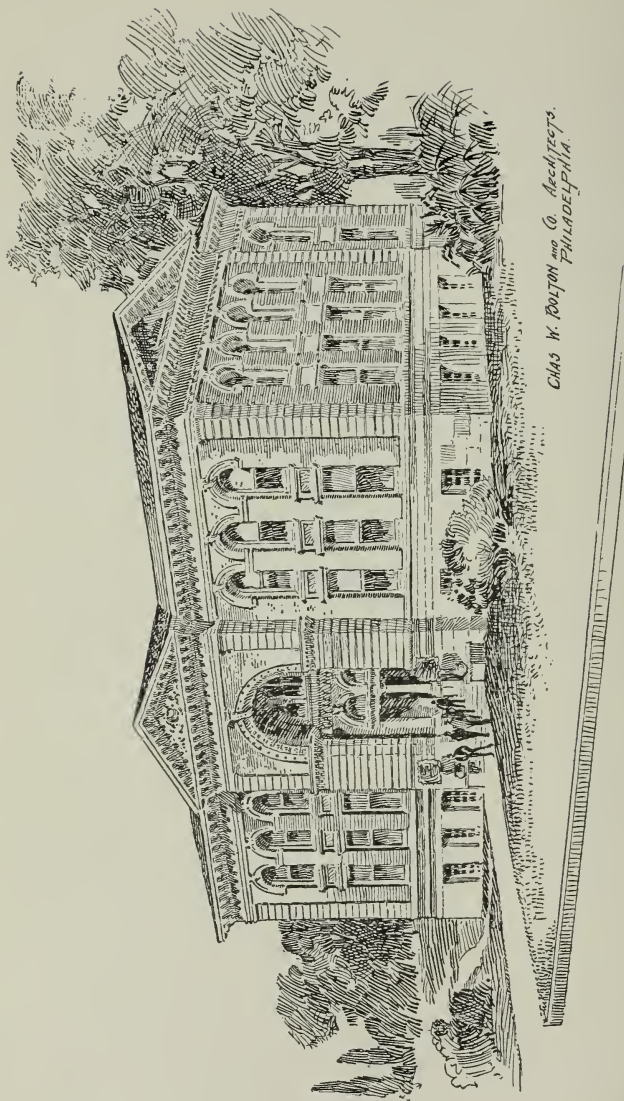


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CATALOGUE
OF
LAFAYETTE COLLEGE.
1901-1902

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CATALOGUE

OF

LAFAYETTE COLLEGE.

INCLUDING THE COURSES OF STUDY

IN THE

CLASSICAL AND SCIENTIFIC DEPARTMENTS

EMBRACING THE

SCHOOLS OF CIVIL, MINING, AND ELECTRICAL
ENGINEERING, AND OF CHEMISTRY.

SEVENTIETH YEAR,
1901-1902.

EASTON, PENNSYLVANIA.

1902.

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CALENDAR.

1901.

September 12, Thursday . . College year began.
 December 18, Wednesday . First term ended.

1902.

January 3, Friday Second term began.
 January 30, Thursday . . . Day of Prayer for Colleges.
 February 20, Thursday . . Senior Prize Debate.
 March 19, Wednesday . . . Second term ends.
 April 3, Thursday Third term begins.
 May 19, Monday Junior Oratorical Contest.
 May 23-28 Final Examination of the Senior Class.
 June 10-14 Examination of the lower classes.
 June 15, Sunday Baccalaureate Sermon.
 Sermon before the Brainerd Society.
 June 16, Monday Senior Class Day and Concert.
 June 17, Tuesday Reunions of the Literary Societies.
 June 18, Wednesday . . . Commencement Exercises.
 June 19, Thursday Examinations for admission.

September 9, Tuesday . . . Registration for entrance.
 September 10, Wednesday . Examinations for admission.
 September 11, Thursday . . College year begins.
 October 22, Wednesday . . Founder's Day.
 November 27, Thursday . . Thanksgiving Day.
 December 17, Wednesday . First term ends.

1903.

January 2, Friday Second term begins.
 January 29, Thursday . . . Day of Prayer for Colleges.
 March 18, Wednesday . . . Second term ends.

LAFAYETTE COLLEGE.

Lafayette College enters upon the work of the new century with every reason to feel that the hopes of the Founders, far back in the nineteenth century, have been realized. It has grown steadily and surely with the growth of the country. Its Faculty has won wide recognition and has grown in numbers. Its students are more numerous than at any time in its history. Its lovely site has been beautified by a noble group of buildings. In the last year of the just closed century a new era has begun in the erection of the Van Wickle Library and the reorganization of the dormitories. The Gayley Laboratory of Chemistry and Metallurgy, and a building for the Y. M. C. A., "Brainerd Hall," the gift of Mr. J. Renwick Hogg, are now being built. With all its growth, Lafayette College remains in fact and in purpose a college; its aim is the education of men; its ideals are determined by moral as well as intellectual considerations; its atmosphere is distinctly Christian.

The College was granted its first charter March 9th, 1826. Its first exercises were held May 9th, 1832, under the presidency of Rev. George Junkin, D. D. The present beautiful site was first occupied in 1834. The College was taken under the care of the Synod of Philadelphia of the Presbyterian Church in 1850. In 1866, during the presidency of Rev. William C. Cattell, D. D., the Pardee School of Science was established by Ario Pardee, Esq. It is situated at Easton, Pa., at the confluence of the Delaware and Lehigh Rivers, and is easily accessible by a number of railroads.

TRUSTEES.

JOHN WELLES HOLLENBACK, <i>President</i>	Wilkesbarre, Pa.
REV. J. H. MASON KNOX, D. D., LL. D.	Baltimore, Md.
JOHN CURWEN, M. D., LL. D.*	Harrisburg, Pa.
JAMES W. LONG	Easton, Pa.
HON. WILLIAM S. KIRKPATRICK	Easton, Pa.
REV. GEORGE C. HECKMAN, D. D., LL. D.	Reading, Pa.
REV. ETHELBERT D. WARFIELD, LL. D.	Easton, Pa.
ISAAC P. HAND, ESQ.	Wilkesbarre, Pa.
JAMES GAYLEY	New York City.
ROBERT SNODGRASS, ESQ.	Harrisburg, Pa.
REV. D. J. WALLER, JR., PH. D., D. D.	Indiana, Pa.
ISRAEL P. PARDEE	Hazleton, Pa.
CHARLES B. ADAMSON	Philadelphia, Pa.
JAMES R. HOGG	" "
WILLIAM L. SHEAFER	Pottsville, Pa.
REV. JOHN R. DAVIES, D. D.	Philadelphia, Pa.
McCLUNEY RADCLIFFE, M. D.	" "
REV. LEIGHTON W. ECKARD, D. D.	Easton, Pa.
EDGAR M. GREEN, M. D.	" "
REV. WILLIAM C. ALEXANDER, D. D.	Washington, D. C.
CARROLL PH. BASSETT, C. E., PH. D.	Summit, N. J.
REV. WILLIAM A. PATTON, D. D.	Wayne, Pa.
COL. HENRY M. BOIES	Scranton, Pa.
JOHN MARKLE	Jeddo, Pa.
JOHN EDGAR FOX, ESQ.	Harrisburg, Pa.
JOSEPH DE FOREST JUNKIN, ESQ.	Philadelphia, Pa.
EDWARD J. FOX, ESQ.	Easton, Pa.

* Died July 2d, 1901.

SAMUEL L. FISLER, A. M., *Secretary and Treasurer*, Easton, Pa.

Of the above Trustees, Messrs. Long, '37; Kirkpatrick, '63; Heckman, '45; Hand, '65; Gayley, '76; Snodgrass, '57; Waller, '70; Pardee, '74; Adamson, '77; Hogg, '78; Sheaffer, '78; Davies, '81; Radcliffe, '77; Eckard, '66; Green, '83; Alexander, '73; Bassett, '83; Markle, '80; J. E. Fox, '85; and E. J. Fox, '78, are Alumni of Lafayette College.

MEETINGS OF THE TRUSTEES.

Thursday, February 13th, 1902 ANNUAL BUSINESS MEETING.
 Tuesday, June 17th, 1902 COMMENCEMENT WEEK.
 Wednesday, October 22d, 1902 FOUNDER'S DAY.

FACULTY.

REV. ETHELBERT DUDLEY WARFIELD, LL. D.,
President, Professor of History and Political Science.
(John I. Blair Foundation.)

FRANCIS ANDREW MARCH, LL. D., L. H. D., D. C. L., LITT. D.,
Professor of the English Language and Comparative Philology.

REV. THOMAS CONRAD PORTER, D. D., LL. D.,*
*Dean of the Pardee Scientific Department, Emeritus Professor of Botany,
Zoology, and Geology, and Curator of the Botanical Collections.*
(Jessie Chamberlin Professorship of Botany.)

REV. AUGUSTUS A. BLOOMBERGH, A. M., PH. D.,
*Professor of Modern Continental Languages and their Literatures, and
Lecturer on European History.*

REV. ROBERT BARBER YOUNGMAN, A. M., PH. D.,
Professor of the Greek Language and Literature.

REV. SELDEN JENNINGS COFFIN, A. M., PH. D.,
(James H. Coffin Professorship of Astronomy.)

JAMES W. MOORE, A. M., M. D.,
Professor of Mechanics and Experimental Philosophy.

CHARLES MCINTIRE, A. M., M. D.,
Lecturer on Sanitary Science.

JOSEPH JOHNSTON HARDY, A. M., PH. D.,
Professor of Mathematics and Astronomy.
(George Hollenback Professorship of Mathematics.)

WILLIAM BAXTER OWEN, A. M., PH. D.,
Professor of the Latin Language and Literature.

EDWARD HART, PH. D.,
Professor of Analytical Chemistry.
(William Adamson Professorship of Analytical Chemistry.)

JAMES MADISON PORTER, C. E.,
Professor of Civil and Topographical Engineering.

FRANCIS A. MARCH, JR., A. M., PH. D.,
Professor of English Literature.

* Died April 25th, 1901.

WILLIAM SHAFER HALL, C. E., E. M., M. S.,
Professor of Mining Engineering and Graphics.
(George B. Markle Professorship.)

REV. EDSALL FERRIER, D. D., LL. D.,
Professor of Moral Philosophy and Hebrew.

JACOB D. UPDEGROVE, A. M., M. D.,
Lecturer on Hygiene, Director of Physical Training.

EDGAR MOORE GREEN, A. M., M. D.,
Consulting Physician in the Department of Physical Training.

PORTER W. SHIMER, E. M., PH. D.,
Resident Lecturer on Iron and Steel.

ALVIN DAVISON, A. M., PH. D.,
Professor of Biology.

FREDERICK BURRITT PECK, PH. D.,
Professor of Geology and Mineralogy.

AMORY PRESCOTT FOLWELL, A. B.,
Associate Professor of Municipal Engineering.

RICHARD KIDDER MEADE, B. S.,
Assistant in Chemistry.

ALLAN ROBERTS, PH. B.,
Instructor in History.

FRED HOWARD MOFFIT, A. M.,
Instructor in Mathematics and Drawing.

WILLIAM DARLINGTON LITTLE, A. B.,
Tutor in Mathematics and Latin.

ALVIN CONVERSE SAWTELLE, A. B.,
Tutor in Latin and Mathematics.

HENRY JOHN LUCKE, A. M.,
Instructor in Physics and Mathematics.

REV. JOHN MOFFATT MECKLIN, A. M., PH. D.,
Instructor in Modern Languages.

FREDERICK WARREN GROVER, M. S.,
Instructor in Electrical Engineering.

HARRY HESS REICHARD, A. B.,
Tutor in Latin and German.

COLLEGE OFFICERS.

ROBERT BARBER YOUNGMAN, PH. D.,
Clerk.

SELDEN J. COFFIN, PH. D.,
Registrar.

AUGUSTUS A. BLOOMBERGH, PH. D.,
Curator of the Reading Room.

JAMES W. MOORE, A. M., M. D.,
Inspector of Buildings.

SAMUEL L. FISLER, A. M.,
Treasurer.

SILVANUS BLANCHARD NEWTON, A. B., M. D.,
Director of Athletics.

WALTER GREENWOOD FORSYTH, A. B.,
Librarian.

CLASS DEANS.

SENIOR CLASS	The President.
JUNIOR CLASS	Professor Bloombergh.
SOPHOMORE CLASS	Professors Youngman and Hall.
FRESHMAN CLASS	Professors Hardy and Owen.

LAFAYETTE COLLEGE.

ADMISSION.

Every applicant for admission to the College is expected to report at the College offices and register immediately on his arrival. Before registering he must submit to the Registrar a satisfactory certificate of moral character from his pastor or some other person known to the College authorities, a certificate of honorable dismissal from the last school which he attended, a statement of the studies which he has pursued and the course which he desires to pursue. His application having been approved he is admitted to the examinations. Examinations are regularly held on the day following the annual commencement day in June, and the day preceding the first day of the autumn term in September, and also on the first day of the second and third terms.

REQUIREMENTS FOR ADMISSION TO THE FRESHMAN CLASS.

Candidates for admission to the Freshman Class are examined in the following books and subjects. It is strongly recommended that candidates be prepared for examination on the requirements as specified. Equivalents will be accepted only when absolutely necessary.

A. REQUIREMENTS IN ALL THE COURSES OF STUDY.

GEOGRAPHY.—*Modern*: Political Geography or Physical Geography.

HISTORY.—*United States*: Johnston, McMaster, or Fiske, and Outline of General History.

MATHEMATICS.—*Arithmetic*: Complete, including the Metric System.

Algebra: Through Radicals and Quadratics (first thirteen chapters of Wentworth's College Algebra, or an equivalent).

Geometry: Plane Geometry entire; as in Wentworth or Loomis.

ENGLISH.—*Grammar*: A general examination will be given without special reference to any particular text-book to test familiarity with paradigms and syntactical analysis, and the correct use of English idioms.

Franklin's Autobiography and *Milton's Paradise Lost*, Books I. and II.; to be thoroughly studied as to subject-matter, form, and structure, including the language used, as to its etymology, syntax, and prosody.

Prose Composition: The writing of a short essay will be required upon a subject drawn from the foregoing text-books. No candidate will be accepted in English whose work is notably deficient in point of spelling, punctuation, idiom, or division into paragraphs.

The works recommended for study by the Association of Colleges and Preparatory Schools of the Middle States and Maryland will be accepted in place of *Franklin* and *Milton*, as follows:—

1901-1905: Shakespeare's *Macbeth*; Milton's *L'Allegro* and *Il Penseroso*, *Comus*, *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

In addition, the candidate may be required to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

Reading: Every candidate must have read a certain number of works of English literature. It is expected that the reading shall be done under the direction of an instructor and accompanied by frequent examinations during the preparatory course, for which four years is appropriate.

The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books. In preparation of this part of the requirement, it is

important that the candidate shall have been instructed in the fundamental principles of rhetoric.

The books set for this part of the examination will be those recommended by the Association of Colleges and Preparatory Schools of the Middle States and Maryland, as follows:—

1901 and 1902: Shakespeare's *Merchant of Venice*; Pope's *Iliad*, Books I., VI., XXII., and XXIV.; *The Sir Roger de Coverley Papers* in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Cooper's *The Last of the Mohicans*; Tennyson's *The Princess*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

1903-1905: Shakespeare's *The Merchant of Venice* and *Julius Cæsar*; *The Sir Roger de Coverley Papers* in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *The Princess*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

B. ADDITIONAL REQUIREMENTS FOR THE SEVERAL COURSES. CLASSICAL COURSE.

GEOGRAPHY.—*Ancient Geography*.

HISTORY.—*Roman History* to Augustus and *Greek History* to Alexander.

LATIN.—*Grammar*: The Roman method of pronunciation is used.

Cæsar: Commentaries, four books, for a portion of which an equivalent in Nepos will be received.

Cicero: Orations, seven.

Virgil: Æneid, six books; *Bucolics*.

Prose Composition: Daniell's, or equivalent.

GREEK.—*Grammar*: Pronunciation according to the written accents and in accordance with the preface to Goodwin's *Grammar* or Hadley-Allen's, sections 11, 14, 19, 20, 21.

Xenophon: Anabasis, four books, for a portion of which an equivalent in *The Cyropedia* will be received.

Homer: Iliad or *Odyssey*, three books; or

New Testament: Gospels, three.

Prose Composition: Collar and Daniell, or equivalent.

For admission to the—

LATIN SCIENTIFIC COURSE.

The requirements are the same as for the *Classical Course* except that for the *Greek* is substituted:—

NATURAL PHILOSOPHY.—The elementary principles (Avery, Gage, or Hall & Bergen); and beginning with June, 1903,

GERMAN.—A thorough knowledge of the Grammar and one hundred pages of simple prose.

For admission to the—

GENERAL SCIENTIFIC COURSE.

The requirements are the same as for the Classical Course except that both *Latin* and *Greek* are omitted, and instead of the Ancient Languages are substituted:—

SOLID GEOMETRY.

ALGEBRA AND PLANE TRIGONOMETRY as stated in Technical Courses below.

NATURAL PHILOSOPHY.—The elementary principles; and

GERMAN.—A thorough knowledge of the Grammar and one hundred pages of simple prose. Beginning with June, 1903, the requirement will be two full years of study.

TECHNICAL COURSES.

For admission to the schools of ENGINEERING and CHEMISTRY the additional requirements are as follows:—

SOLID GEOMETRY.

ALGEBRA.—Properties of quadratic equations: surds and imaginary quantities: ratio, proportion, variation, inequalities and incommensurable quantities: arithmetical and geometrical progressions (chapters XIV., XV., and XVI. of Wentworth's College Algebra or an equivalent). This will be a requirement beginning with June, 1903.

PLANE TRIGONOMETRY.—It is proposed to make this subject a requirement beginning with June, 1905.

GEOGRAPHY.—Physical Geography.

NATURAL PHILOSOPHY.—Elementary principles (Avery, Gage, or Hall & Bergen).

GERMAN.—One year's study in GERMAN as above. A thorough knowledge of the Grammar and one hundred pages of simple prose. Beginning with June, 1903, the requirement will be two full years of study.

PARTIAL OR SPECIAL COURSES.

In addition to the courses above specified students may be admitted under exceptional circumstances to pursue

courses of study of a special character not leading to a degree. Such students are required to undergo such preliminary examination as may be deemed necessary to ascertain their fitness to pursue the proposed course, and when admitted they are subject to the same rules and regulations and the same examinations in the studies pursued as are other undergraduates. On completing their course they will receive, on application, certificates of proficiency in such courses as they have satisfactorily completed.

ADVANCED STANDING.

Candidates for advanced standing are examined not only in the preparatory studies, but also specially in the previous studies of the class they wish to enter, or their full equivalents.

Students from another College bringing certificates of rank and honorable dismissal are permitted to recite on trial with corresponding rank in this College, until there is sufficient test of their qualifications for admission to regular standing. They will, however, be examined on whatever studies of the course may not be in the curriculum of the College from which they come, unless there are full equivalents.

No student, whether from another College or not, will be admitted to the Senior Class as a candidate for a degree after the beginning of the second term.

CONDITIONS.

Students who fail to pass in a part of the subjects in which they are examined may be admitted upon the condition that they pass a satisfactory examination on such

subjects before the end of the term next after that in which they enter. The number of such conditions with which a student is admitted to the College will be determined in each case by a vote of the Faculty.

CERTIFICATES.

Certificates of the Regents of the University of the State of New York and of certain approved preparatory schools are received in lieu of examination for entrance. Certificates from schools must be signed by the Principal and certify only to work done during school hours. They should be filed with the Registrar before the entrance examination in June. Blank certificates will be furnished upon application. Wherever the certificate does not cover one or more of the requirements of admission or supply a satisfactory equivalent, an examination upon such subject or subjects will be required. Such certificates will not be received after one year from the completion of the period of study for which they are given unless an additional certificate of continued study accompany them.

MATRICULATION.

No student is considered a regular member of the College until after his matriculation, which takes place thirty days after his entrance. During the interval between his admission and matriculation he is, however, in all respects subject to the laws of the College.

COURSES OF STUDY REQUIRED OF ALL DEPARTMENTS.

All of the courses of study are so arranged as to provide for at least three lectures or recitations each week-day ex-

cept Wednesday and Saturday, which are half-holidays, there being no afternoon recitation. Wednesday evening is set apart for the Literary Societies, and in order to co-operate with their work the first exercise on Thursday morning is given to elocution. Every student is expected to conform to this arrangement of hours. Special students must arrange a schedule of sixteen weekly exercises. One recitation hour is regarded as the equivalent of three hours of field and laboratory work.

BIBLICAL INSTRUCTION.

The morning recitation in every class of all departments on Monday in each week is given to Biblical instruction. In the Freshman year a general view of the contents of the Bible and of each book is given, with special attention to chronology, history, and geography. The class is divided into three sections, instructed by Prof. Hardy, Prof. Hall, and Mr. Sawtelle. The text-books are the English Bible and Coleman's Geography of the Bible. In the Sophomore year the Acts of the Apostles is studied. The students in the Classical Course read the book in the original Greek with Prof. Youngman; those in the Latin Scientific in Latin with Prof. Owen, and the Technical divisions in French with Dr. Mecklin and Mr. Reichard. Special attention is given to the lives and labors of the Apostles and to the founding of the Christian Church. In the Junior year the Epistle to the Romans is studied. The students in the Classical Course read it in the original with Prof. Francis A. March, and the students in the Scientific Courses, in German, with Prof. Bloombergh. The Epistle is studied with

reference both to language and doctrine with much care and iteration. In the Senior year a course, in which Uhlhorn's Conflict of Christianity and Heathenism is used as a text-book, is given during the first half of the year by the President, and during the remainder of the year a brief course in the Evidences of Christianity. In addition to these courses the Old Testament in the original Hebrew is offered as an elective study in the Senior year, and instruction in the history of the English Bible, its translations and its translators, its merits and its influence, is given. It is intended that the Bible shall be a central object of study throughout the course. It is dealt with reverently as the Word of God, and as the inspired and infallible rule which God has given to His people.

In connection with the study of the Bible, certain prizes were established by the Rev. Lyman Coleman, D. D., sometime Professor of Biblical and Physical Geography in Lafayette College. These prizes are awarded at the end of Freshman year. (See page 117.)

PHYSICAL CULTURE.

HUMAN PHYSIOLOGY.

The lectures on Health to the Freshman Class include the general principles of Physiology and Anatomy, and are thorough and practical, and illustrated by diagrams. Special consideration is also given to the bearing of the facts and principles upon Natural Theology.

THE GYMNASIUM.

The College has ample ball grounds, tennis grounds, and boating facilities, a light, airy, tasteful gymnasium,

thoroughly equipped with the best modern appliances, dressing-room, bath-rooms, &c., and uses a thorough system of physical culture, participated in by all the students, who are required to be in the Gymnasium at set times for class drill. The Gymnasium is also open at given hours for voluntary work. Before entering the Gymnasium each student must be examined by the Medical Director, and if it is found that the regular class exercises are not likely to be healthful for him, other exercises will be prescribed suited to his constitution and condition. All the exercises in the Gymnasium are under the supervision of the Director of Physical Training.

A fine athletic field has recently been purchased and equipped by the Alumni and the Easton friends of the College. It adjoins the campus on the west, and affords excellent facilities for all out-door sports.

All athletic sports are under the careful supervision of a committee of the Faculty, of which the Medical Director of the Gymnasium is a member. *No student is permitted to take part in public contests without written permission from his parents.*

CLASSICAL DEPARTMENT.

The Classical Department consists of the historic course in the *Arts, or Humanities*, and retains the regular character of that course, which has so long been regarded as the foundation of a liberal education. The course has a fixed curriculum during the earlier years, but in the latter part of the course latitude is allowed by the introduction of elective studies for the student to select such

studies as he deems the best preparation for his subsequent pursuits.

This Department being the usual preparation for the learned professions, including teaching and journalism, special regard is given to the necessities of these professions, so that in addition to being the thoroughly tried means of securing a broad and liberal culture and an approved foundation of Christian scholarship, it is particularly fitted to prepare men for the learned professions. It is also recognized as a desirable preparation for other pursuits, including scientific and technical professions, wherever the circumstances of the student will permit.

The instruction embraces a systematic study of the Bible and the Evidences of Christianity throughout the course, of the Ancient and Modern Languages and their literatures, together with Comparative Philology; Pure and Applied Mathematics; Physics, Chemistry, and the Natural Sciences; Rhetoric and Elocution; Logic and Metaphysics; History and Political Science; and Mental and Moral Philosophy.

PHILOSOPHY.

MENTAL AND MORAL PHILOSOPHY.

Professors March and Ferrier.

Mental Philosophy is a required study of Senior year, and is pursued under the direction of Prof. Francis A. March. The text-books used are Haven's Mental Philosophy and Baldwin's Psychology, but the students are required to work up the topics by self-examination, by the

study of the investigations of the most eminent authors, and by class discussions. Weekly written essays are also required of every student, in which he is expected to record the results of such special investigations.

Ethics is required during the first term of the Senior year. The text-book used is Seth's *A Study of Ethical Principles*. The course aims to outline the psychological basis of Ethics, the nature of the moral ideas, and the metaphysical implications of morality.

Theism is a required study during second and third terms of Senior year, the text-books being Flint's *Theism* and Hibben's *Problems of Philosophy*. The course seeks to expound the grounds of theistic belief, and to investigate the final problem of metaphysics, *i. e.*, as to the nature of Ultimate Reality. The anti-theistic theories are also taken up, critical attention being given to Agnosticism, Positivism, Materialism, and Pântheism.

Logic is a required study in the third term of Junior year. The text-book is Jevons' *Primer of Logic*. This is supplemented by lectures on Mill's theory of Induction, especial attention being given to scientific method.

The history of modern philosophy is offered as a Senior elective in the second and third terms. Lectures are given on the principal philosophers, from Bacon to contemporaneous thinkers. The lectures seek to exhibit the historical and philosophical connections of the various movements of modern philosophy, and to give a critical estimate of them. No text-book is used, but the students are referred to the writings of the masters themselves, and to some of the histories of philosophy, as *Erdmann*, *Uberweg*, *Windelband*, and *Falckenberg*.

HISTORY AND POLITICAL SCIENCE.

ANCIENT HISTORY.

Professors Youngman and Owen.

In connection with the courses in Latin and Greek a very careful survey is given of Ancient History, but especially of the history of Greece and Rome. The topics immediately connected with the authors read are given particular attention, but an attempt is made to bridge the period intervening, and as the authors represent the most important periods of the history of Greece and Rome the result is that the historical accent is rightly placed. Attention is given not merely to the political history of the various periods under discussion but also to the social, literary, and philosophical history of each epoch. The close relation which exists between History and Geography is recognized, and a careful study of Classical Geography forms a part of the course.

HISTORY OF EUROPE.

Professor Bloombergh and Mr. Roberts.

An elective course is offered in the second and third terms of Senior year, which begins with the fall of the Roman Empire and traces the rise and growth of European institutions through the Middle Ages. Emerson's *Introduction to, and History of, the Middle Ages* are used as text-books, and are supplemented by lectures and library work.

During the third term a course of lectures is given to the Seniors by Professor Bloombergh on the Origin and Development of the Institutions of Modern Europe.

These lectures begin with an inquiry into the causes of the Dark Ages, trace the influences which led to the Reformation and the Renaissance, and the influence of the new impulses upon modern thought and action. These lectures while dealing largely with the philosophical side of History are so related to the previous instruction as to rest upon known facts.

CONSTITUTIONAL HISTORY.

THE UNITED STATES.

The President and Mr. Roberts.

An optional course, especially designed to prepare for the required courses in the Constitutional History of the United States, is offered in the first term of the Junior year. This course consists mainly of prescribed reading, with written reports upon the history of the American Colonies, the relations with Great Britain prior to 1775, and the causes and consequences of the Revolution.

The required work begins in the second term of the Junior year with a course dealing with the Constitution from the point of view of its historical development. Fiske's Critical Period of American History is used as an introduction to this course, and it is accompanied by a critical study of several important constitutional documents, such as Magna Charta, the Petition of Rights, the Articles of Confederation, and the Ordinance of 1787. Then the Constitution is taken up section by section and studied with reference to its historical development and its subsequent interpretation and construction.

This course is followed in the third term of the Junior

year by a course dealing with the constitutional history of the first thirty years under the Constitution, which undertakes to investigate the more important constitutional questions of the early years of the Republic with sufficient thoroughness and care to give the student a firm grasp of a sound method of historical study.

The study of American institutions is interrupted in the first term of Senior year by a course in general constitutional history, but is resumed in the second and third terms with a wider outlook. A more detailed study is now given to the whole subject, with Bryce's *American Commonwealth* as an introduction and general guide. It is supplemented by lectures and discussions.

These three courses are designed to give a broad and intelligent basis for American citizenship, and to prepare the way for original investigation in American history. The Ward Library is rich in material for special studies, and every effort is made to encourage the student to make independent researches.

ENGLAND.

Some period in English Constitutional History is offered each year as an elective study. The period is usually one which is closely related to the questions arising in the history of the United States, and while studied for its own sake, its value as throwing light on American History is brought out.

GENERAL CONSTITUTIONAL HISTORY.

A course in general constitutional history is begun as a required course in the first term of the Senior year and continued as an elective through the second and third

terms. It begins with the origin of the State, and following the plan of Woodrow Wilson's *The State*, pursues the development down to the present time. The recitations are supplemented by lectures and reading, with written reports of investigations.

POLITICAL SCIENCE.

The President.

This Department embraces courses in the elements of International Law, and in the origin and development of the State in the first term of Senior year, and in Political Economy in the second term of Senior year, and elective courses by Dr. March in Blackstone's Commentaries, and by the President in the elements of Jurisprudence.

The course in International Law undertakes to do little more than to exhibit the fundamental principles which govern international affairs, and by the study of a few important cases to show the method of diplomatic procedure. It is especially intended to give the students the information needed to understand current discussions of foreign relations. In the theory of the State, Prof. Woodrow Wilson's book is used, and is supplemented by lectures illustrating the analytical method.

The course in Political Economy at present consists of a rapid survey of the principles, and only limited time is given to the discussion of practical applications of economic theories. Special attention, however, is given to the questions which are vital issues of the day, such as Finance and the Tariff. The utmost care is taken to avoid the teaching of party politics under the guise of

Economic Science. At the same time the teaching in this Department recognizes the importance of inculcating honest views on the money question and the right of American citizens to know what can be said for the American policy of Protection both in the abstract and in its actual workings.

All these courses are supplemented by papers, essays, and debates. The Literary Societies and the public debates do much to stimulate interest in the class work, and to give it practical application.

RHETORIC AND ELOCUTION.

The course in Rhetoric includes earlier instruction and praxis in Diction, Figures of Speech and Style, and later in Invention and in the Principles of Rhetorical Criticism; and these applied to required practice in the writing of original essays, orations, and themes.

Besides the study of text-books, weekly written essays are required, and declamations in class or before the College. *Extemporaneous Speaking* is also cultivated. In those studies, such as Mental Philosophy, in which the recitation can be had by topics, students are required to take the floor daily and present an outline of the author's thought, with such additions as they choose in the form of a lecture to the class. Extemporaneous (unwritten) debates are also had in class. The Juniors, during the third term, and the Seniors deliver unwritten addresses on subjects of their own choice, instead of selected declamations. The other classes speak selected pieces. Great pains are taken to encourage the habit of simple and earnest communication of connected thought.

THE GREEK LANGUAGE AND LITERATURE.

Professor Youngman.

The aim of the Greek course is to be thoroughly grounded in Greek forms, idioms, and syntax—to learn the composition of words, the formation of phrases, and the construction of sentences. In the earlier part of the course there is a daily lesson in the grammar, with a test of the student's ability to apply it to the text just read. Etymologies and English derivatives are constantly called for.

The best passages of the best representative authors are translated into the best attainable English. In poetry there is a study of Homer, Sophocles, and Aristophanes; in prose, of Herodotus, for history; of Aeschines and Demosthenes, for oratory. For ethical questions there is a study of Socrates in the *Memorabilia* and the *Apology*.

Attention is directed to Greek life, education, faith, religion, and habits of thought and expression, as compared with our own. The old Greek citizen and the modern American citizen are brought face to face.

Essays also are called for giving the results of the students' researches. When DeCorona is read there is a special class debate on the relations of Aeschines and Demosthenes with Philip. When Homer is read there are references to the Bible for comparison of faith, religion, and form of expression. There is an attempt to bring the students to an intelligent appreciation of the beauty and grace and force in Greek literature to cultivate the taste, regulate the heart, and discipline the mind.

THE LATIN LANGUAGE AND LITERATURE.

Professor Owen, Messrs. Sawtelle, Little, and Reichard.

It is the aim in this Department to give the students an intelligent acquaintance with the language, literature, and institutions of Rome, and qualify them for the efficient treatment of these subjects as teachers, or for the further scholarly pursuit of these and kindred studies after graduation if they should be so disposed. We try to unite accuracy in details with facility in reading within the limits of a reasonable range.

The authors read are those which present the Latin language and literature at different stages, but mainly at its best; and the method of pursuing them is based on the belief that the best way to master these great works of genius, whether in their linguistic or literary aspects, is by the minute and careful study of selected passages. Such passages are examined, therefore, clause by clause and word by word, the common matters of grammar and idiom coming first. In the earlier parts of the course there is a grammar lesson with each recitation, and the application of grammatical principles to the text in hand forms an important part of the daily drill. The elementary principles of phonology and a review of etymology and general syntax are thus treated in the Freshman year, and in the Sophomore year a more exhaustive study of moods and tenses and the formation of words. Then come questions of style, the author's habits of diction, his use of synonyms, rhetorical forms of speech, the arrangement of words, &c., and, if poetry, the significance of metrical forms.

Literary and historical allusions are looked up, also mythology, biography, geography, antiquities, everything in short which can help to clear up the author's meaning.

Aside from these incidental inquiries in connection with every text, various collateral branches of study are regularly pursued from term to term. There is the topical study of history in connection with Livy and Cicero (*De Oratore*); of antiquities in connection with Horace; of literature in connection with Latin Hymns and Tacitus; and of the history of philosophy in connection with Cicero (*De Officiis*).

A brief course in Roman archæology is also given, illustrated by an extensive collection of Roman photographs.

It is kept in mind, also, that the training in this Department should be practically helpful and valuable to those who are to speak and write the English language. With a view to cultivate the power of expression, besides the oral work of the class-room there are frequent exercises in writing, in which it is sought to faithfully render the author into the English of our literary standards.

In preparation for the course in Comparative Philology given in the Senior year by Professor March attention is called to the history of inflection, the origin and significance of the affixes of case, number, tense, mood, voice; to the physiology of speech, the regular weakenings of sound, and a comparison of forms in the Latin, both etymological and syntactical, with the corresponding forms in the Greek and English.

The Latin is pronounced according to the Roman method. Harper's New Latin Lexicon is used; Allen & Greenough's Latin Grammar is used as a text-book; the larger grammars of Madvig and Roby will be found helpful for references.

THE HEBREW LANGUAGE.

Professor Ferrier.

Hebrew is an elective study in the second and third terms of the Senior year. As preparatory to more advanced work, special attention is given to the etymological principles of the language, and also to the inflexions and laws of euphonic changes. To apply these principles, and to acquire a good working vocabulary, portions of Old Testament History are read, and translations made from English into Hebrew. The text-book used is Prof. Green's Elementary Hebrew Grammar.

ENGLISH LANGUAGE, COMPARATIVE PHILOLOGY.

Professor Francis A. March.

For training in speaking and writing English correctly every student is required to hand in two themes in every term of his college course. Many of them are read in class and criticised as time allows. In this work professors of all departments take part. It is desired that students in each department shall write on subjects connected with it in the words and phrases current among experts, and know the precise meaning of these words and phrases. In these matters the professors in each department are authorities.

The professors of foreign languages recognize that translation into English is training in English as well as in the foreign language, and written translations are required partly in the interest of English study.

The study of the language in literature is different from the training just described. Its immediate purpose is the interpretation of masterpieces, the rethinking of the thoughts of master minds. It needs all the philological knowledge which can be had to clear up and illuminate the language. Such study also furnishes the materials and invites the inductions of systematic and historical philology and theories of the growth of literature. It must be largely comparative study, and in the Classical Course it is thought best to defer it until the student has become acquainted with other languages. It is begun in the second term of Junior year with the study of Milton's "Paradise Lost." Anglo-Saxon is taken up at the same time and four recitations per week in each are prepared, the two languages being heard in immediate succession within a college hour.

In the third term Shakespeare and Anglo-Saxon are studied, and recited four times a week, as in the second term, and there are optional courses and prize examinations on Shakespeare in general, and English before Chaucer.

In the Senior year a general survey of English literature is made (two hours per week) in the second term. Four hours a week of the third term are devoted to Comparative Philology, summing up the results of former special studies and arriving at laws of language in general. For further details see page 56.

MODERN LANGUAGES.

*Professors Bloomberg, F. A. March, Jr., Dr Mecklin, and
Mr. Reichard.*

The work in this Department is based upon the view that the aim of the American college is not to make specialists but to give a many-sided, well-rounded education; hence the different branches of the curriculum must in their very nature be co-ordinated with each other and the time allotted to each limited. It follows from this co-ordination and from the limited time allotted to each of the several branches, that in the pursuit of linguistic studies in the modern Continental languages only such a method is possible that permits us in the time given to reach the result which it is proposed to achieve. This result is simply to give to the student the beneficial mental development resulting from a thorough linguistic training; a result formerly reached by the exclusive study of the dead languages and now sought by the study both of ancient and modern languages, either in conjunction, as in the Classical and Latin Scientific Courses, or by the modern languages exclusively, as in the General Scientific and Technical Courses. And, secondly, to acquaint the student with the masterpieces of modern literature, scarcely, if at all, inferior in literary value, and certainly not less important for the proper equipment of the cultivated scholar, than the works of the great masters of Greek and Latin. The method used may be regarded as a combination of the scientific and the historical methods. The scientific method being used to lay the foundation, and the historic to broaden and develop the results of the earlier method.

We propose—

(a.) To teach the present status of the grammar and vocabulary of the languages studied ;

(b.) To show how they acquired their present status ;

(c.) To introduce the study of the best writers of Germany and France in a progressive series, with special attention to contemporary literature, and, in a limited degree, to extend the same method to the literature of Spain and Italy ;

(d.) To trace the development and give some account of the principal writers whose works are studied.

In fine we purpose, so far as time will permit, to give careful and systematic instruction in grammar and phonetics, in the literature of the various important periods, together with the literary history of each epoch, with special reference to the German and French languages, but as far as possible keeping in view the relations between the languages, and particularly to English.

In instruction in grammar decided preference is given to the shortest possible text-books, such as Ahn's Synoptical German Grammar and Edgren's French Grammar. The ground of this preference is that a short grammar enables the student to begin reading the language at an earlier period, and the success of syntactical studies, which are but applied logic after all, depends less on the lifeless memorizing of rules of syntax than on the comments of the teacher in the class room.

The required study of French and German in the Classical Course is at present limited to a single term each, there being four recitations each week. An elective course in German and French is offered in the second

and third terms of the Senior year; and in the second term of the Junior year students may pursue Italian or Spanish.

It will be seen that the study of German and French is largely linguistic, though the amount of these languages taught is sufficient, with the previous information and training of the students in Latin, Greek, and English, to give a fair reading knowledge. Those who take the Senior electives generally possess a fair working knowledge of one or both of these languages.

MATHEMATICS.

Professor Hardy and Messrs. Little and Sawtelle.

The course in Mathematics embraces during the Freshman year the continuation of the study of Algebra, begun in the preparatory school (including a brief review of simple equations), to which the entire work of the first term in this Department (four hours per week) is given. In the first term Freshman year all have Algebra four hours per week. In the second term Division A has Algebra and Geometry each three hours per week. In the third term it has Geometry and Trigonometry each three hours per week. Division B has Algebra two hours per week and Geometry four hours per week in the second and third terms of the Freshman year.

In the Sophomore year Trigonometry and Mensuration occupy four hours per week during the first term. In the second term five recitations per week are given to the study of Analytical Geometry. The course is begun by the drawing of a large number of curves from their equations, so that from the first the student may see that

the properties of a curve may be studied by means of its equation. After that the demonstrations of the proposition usually given in the Analytical Geometries are constructed with the same strictness of reasoning, and every step in them is proven with the same logical rigor as in Euclid. A clear and correct figure showing every point and line mentioned in the demonstration is always required. It is hoped that at the conclusion of his demonstration the student shall see clearly and at once the meaning of every symbol in the equation obtained, and shall be perfectly sure of the truth of his conclusion. Training in clearness and accuracy of thinking, and in the effective expression of thought, is regarded as of the highest importance. Calculus is taken up in the third term of the Junior year, two hours per week being devoted to it that term, and two in the first term of the Senior year. The discussions of Differential and Integral Calculus are made as far as possible to illustrate the essential oneness of the two branches of the Calculus. A further course in higher branches of Mathematics is offered as an elective in the second and third terms of the Senior year. Field work in Surveying occupies a portion of the time during this term, amounting to an equivalent of one hour of recitation work in each week, that is, three hours of actual field work.

ASTRONOMY.

Professor Hardy.

The study of Astronomy is begun in the first term of the Senior year and continued through the second. It is illustrated by practical work in the Observatory with the

various astronomical instruments. The course includes a thorough study of the points and lines of the Celestial Sphere; a short discussion of the construction and use of the principal astronomical instruments; of Parallax and Refraction, and of the methods of determining Latitude, Time, and Longitude. Then follows a careful study of the Earth as a member of the Solar System; of the Moon; of the Sun, including the Spectroscopy of the Sun; of Eclipses; of the general laws and construction of the Solar System, and of the Planets and their Satellites. This is followed by a brief discussion of the methods of determining the Sun's Horizontal Parallax and a fuller discussion of Comets, Meteors, and the fixed Stars, including the Spectroscopy of these bodies. The course ends with a study of the general structure of the Stellar Universe and a discussion of the Cosmogony and the Nebular Hypothesis.

PHYSICS.

Professor Moore and Messrs. Grover and Lucke.

The studies in this Department in all the courses occupy four recitations or lectures a week for a year, beginning with the third term Sophomore year.

In Mechanics there is a thorough mathematical discussion, accompanied with lectures and experiments. In other subjects the study of the text-book is accompanied with illustrative lectures, aided by a valuable collection of apparatus and charts, which is continually enlarged and improved.

The course begins with an experimental demonstration of the fundamental principles of Statics and Kinetics in

connection with a mathematical treatment of the subjects. This is followed by very full lectures on Heat, Magnetism, Electricity, Sound, and Light. Daily written and oral examinations impress the laws and facts thus presented upon the student.

For the advanced studies of the technical courses in Analytical Mechanics and allied topics of Mechanical and Electrical Engineering, see pages 71 and 84.

CHEMISTRY.

Professor Hart and Mr. Meade.

The study in this Department begins with a course of lectures on General Chemistry, combined with the study of a text-book. In connection with these lectures each student is required to work in the Laboratory under the direction of the Professor. In the Senior year an elective course in Qualitative Analysis is also offered. Students in full standing who receive permission from the Faculty may also work in the Laboratory outside of recitation hours, if they so desire.

BIOLOGY.

Professor Davison.

The work in Botany is entirely elective. A general course in practical, morphological, and physiological Botany is open to the Seniors in the Fall term. A course in special structural and systematic work is open to the Seniors during the Winter and Spring terms.

The College Herbarium is extensive and particularly rich in North American species, ranking in this respect

among the best in the country. In its creation Dr. Porter has been actively engaged for nearly half a century. It has been gradually built up by personal collection, gift, exchange, and purchase, and well represents the growth of this branch of the science in the United States during this period of time. It contains the type-specimens of the species described by him. A library, also, rich in the literature pertaining to the subject, has been accumulated in the same way, and the letters received in correspondence with distinguished naturalists have been preserved.

The Flora of the State of Pennsylvania is kept apart from the General Herbarium, and is acknowledged to be the most complete in existence.

For field work in Botany the region around Easton possesses unusually fine material.

The courses in Biology are elective only, and consist of work throughout the Junior and Senior years. They are open for election to Classical, Latin Scientific, and General Scientific students. In order to meet the double purpose of a professional preparation and general culture, the courses are so arranged as to provide in each the special knowledge required without sacrificing the ends of general culture and discipline, which is sought in all the undergraduate courses. Those not wishing to take the complete course should begin their work the third term of the Junior year. Any one electing Biology will be required to pursue the study at least two terms. No one will be permitted to enter the course later than the first term of the Senior year, and those who begin the study in that year must pursue it throughout the year.

The work in this Department begins with the Junior and extends through the Senior year, one term being devoted to each of the following branches: Mammalian Anatomy, Histology, General Biology, Vertebrate Morphology, Human Anatomy and Physiology, and Embryology.

The course in Mammalian Anatomy includes the preparation and preservation of animals, both for museums and dissecting purposes, together with a comparative study of the various systems in the cat, dog, rabbit, and opossum, after the student has familiarized himself with the structure and relative location of the organs in a typical mammal. Dissections, demonstrations, drawings, recitations, and reports by the students serve not only as a valuable discipline in the use of language, manipulation, and accurate observation, but supply the investigator with a store of practical facts in logical order. Additional lectures and demonstrations are also given by the instructor.

The course in Histology is eminently practical, treating of the hardening, preserving, embedding, section cutting, and staining of all the important tissues, and giving a thorough knowledge of the use of the microscope. Each student is required to mount for permanent preservation at least fifty specimens, and to deposit with the Laboratory a sample of charts prepared from specimens thus mounted which he has used in his demonstrations and reports before the class.

General Biology is arranged to give a concise knowledge of the lower forms of animal and plant life, including a brief survey of Bacteriology. Special attention is

given to the life-history of the invertebrates and their economic relation to the human race.

Vertebrate Morphology gives an opportunity for the comparative study of the various systems and organs in the vertebrata. Amphioxus, petromyzon, carp, frog, turtle, pigeon, cat, and dog are among the forms dissected and otherwise studied. The manner of development of the animal kingdom is brought prominently before the student by specially prepared charts and diagrams.

Human Anatomy and Physiology are taught by experiments, drawings, reports, and recitations by the students, and lectures, demonstrations, and quizzes by the instructor. Actual dissection of the cadaver is not required. Instead of this, the study of the various organs of the human body preserved in alcohol, and the study of a life-size French manikin, serve to give the investigator an adequate knowledge of the structure and functions of the human organs.

In Embryology the development of the chick embryo at different stages is carefully studied. The eggs of aves, amphibia, and pisces are incubated in the laboratory, and investigated during their development. The study of Embryology is a fitting conclusion to the Biological series, as here one may see the entire history of the animal kingdom enacted in a single species.

A large laboratory, well equipped with microscopes, microtome, water baths, Koch's vegetation incubator, re-agents, numerous skeletons, &c., affords ample facilities for the above work.

Those taking the above-described course in Biology,

together with the required number of hours in Chemistry, Physics, and Botany, will be given certificates admitting them to the second year's work in the Medical Department of the University of Pennsylvania and certain other medical schools.

GEOLOGY AND MINERALOGY.

Professor Peck.

This course, which is also open to students of the General and Latin Scientific courses, begins in the third term Junior year with a brief discussion of rock-forming minerals and the way they unite to form igneous, metamorphic, and sedimentary rocks. This is a necessary preparation for the course in Geology, which continues as an elective throughout the Senior year. In this Senior elective course Prof. W. B. Scott's text-book, *An Introduction to Geology*, is followed, and the first term of the year is devoted to Dynamical, Structural, and Physiographical Geology. Class-room work is supplemented by excursions into the region about Easton, which abounds in a variety of features of great geological interest.

The second term of the year is devoted to Historical Geology, during which especial attention is paid to the succession of life forms. The work of the class room is supplemented by a careful study of an excellent working collection of fossils now in the possession of the Department.

The third term is occupied in practical field work in Geology, in mapping, and in constructing geologic sections of the region about Easton.

Among the teaching appliances of the Department may be mentioned an excellent study collection of igneous rocks, consisting of about eight hundred specimens, many of which have their corresponding thin sections for microscopic study. These are added to from time to time as opportunity affords. They are all accurately labeled. Also an equally good collection of about twelve hundred specimens, illustrating Stratigraphical Geology, all well labeled; numerous physiographical and geological maps; sixty-four large palæontological charts, made under the direction of Prof. V. Zittle, of the University of Munich; an excellent stereopticon, with about seven hundred slides, illustrating a great variety of geological and palæontological subjects; and numerous wooden, glass, and plaster models for class-room work in Geology and Mineralogy.

SYNOPSIS.

CLASSICAL COURSE.

FRESHMAN YEAR.

HOURS.

MATHEMATICS. <i>First Term.</i> —Algebra. A brief review of the requirements of admission and a continuation of the study of equations	4
<i>Second Term.</i> —Algebra, and Geometry, Plane and Solid . .	6
<i>Third Term.</i> —Algebra completed, Solid Geometry completed, Division B. Geometry, Trigonometry, Division A, 6	
LATIN. <i>First Term.</i> —Livy: Books I. and XXI.; Latin Prose; Early Roman History, and the second Punic war	4
<i>Second Term.</i> —Horace: Odes; Prosody; Latin Prose	4
<i>Third Term.</i> —Horace: Satires and Epistles; Roman Antiquities. Throughout the year a review of Syntax and Etymology; exercises in written translation	4
GREEK. <i>First Term.</i> —Xenophon: Memorabilia; prose composition; classical geography	6
<i>Second Term.</i> —Herodotus: select passages; old Greek life .	4
<i>Third Term.</i> —Homer: The Iliad; select passages from the first six books; Greek literature	4
THE BIBLE.—The Bible in English and Coleman's Geography of the Bible throughout the year	1
HYGIENE. <i>First Term.</i> —Lectures upon the Essentials of Health	1
<i>Throughout the year</i> —Declamations, Themes, and Forensics are required.	

NOTE.—The authors read are changed from time to time, and the passages selected for study vary frequently. Those named above are used in 1901-1902, and give a fair idea of the work done.

SOPHOMORE YEAR.

MATHEMATICS. <i>First Term.</i> —Plane and Spherical Trigonometry, Mensuration, and Plane Analytical Geometry, Division A. Trigonometry, Division B	4
<i>Second Term.</i> —Plane Analytical Geometry, Division B. Plane and Solid Analytical Geometry, Division A	5
PHYSICS. <i>Third Term.</i> —Elementary Mechanics (Moore) . . .	4

HOURS.

LATIN. <i>First Term.</i> —Cicero: De Oratore; the subjunctive mood; Roman History from the Gracchi to the Empire . . .	4
<i>Second Term.</i> —Christian Latin: March's Latin Hymns; derivation and formation of words; early Roman literature	4
<i>Third Term.</i> —Cicero: De Officiis; Topics in the History of Philosophy	2
GREEK. <i>First Term.</i> —Homer: The Iliad; select passages from Books XVIII. to XXIV.; Homer and the Bible compared	4
<i>Second Term.</i> —Plato: The Apology and Crito; select passages	4
<i>Third Term.</i> —Aeschines against Ctesiphon	4
Throughout the year careful attention is given to the social and political history of the period suggested by the text.	
ENGLISH LANGUAGE. <i>First Term.</i> —Trench: The Study of Words	2
<i>Second Term.</i> —Rhetoric	1
FRENCH. <i>Third Term.</i> —Grammar, Composition, and Translation of easy select passages from modern writers . . .	4
THE BIBLE.—The Greek Testament: The Book of Acts . . .	1
<i>Throughout the year</i> —Declamations, Themes, and Forensics.	

JUNIOR YEAR.

First Term.

PHYSICS.—Heat, Magnetism, and Electricity	4
LATIN.—Tacitus: Agricola, and selections from the Annals. Roman Literature of the Silver Age	2
GREEK.—Demosthenes: On the Crown; History	4
GERMAN.—Grammar, Composition, and Translation from modern authors	4
THE BIBLE.—The Epistle to the Romans in Greek	1
BIOLOGY.—Elective with Latin (in connection with the History of the next term): Mammalian Anatomy	2

Second Term.

PHYSICS.—Acoustics, Optics	4
GREEK.—A play of Aeschylus or Sophocles	2

HOURS.

ENGLISH.—Milton	} 4
ANGLO-SAXON.—Grammar and Reader (March)	
HISTORY.—Constitutional History of the United States	2
CHEMISTRY.—Lectures, Text-book, and Laboratory work	2
THE BIBLE.—The Epistle to the Romans in Greek	1
ROMANCE LANGUAGES.—Spanish or Italian, optional	2
BIOLOGY.—Elective with Greek for those who have taken	
Mammalian Anatomy: Histology	2

Third Term.

LATIN.—Roman Satire: Juvenal; Archæology, Roman remains	2
ENGLISH.—Shakespeare	} 4
ANGLO-SAXON	
CHEMISTRY.—Lectures, Text-book, and Laboratory work	2
LOGIC.—Jevons	2
THE BIBLE.—The Epistle to the Romans in Greek	1
Declamations, Themes, and Debates throughout the year.	
ELECTIVES.—Each student to choose two periods from the following:—	
MATHEMATICS.—Calculus	4
GEOLOGY	2
HISTORY.—Constitutional History of the United States	2

BIOLOGY.—General Biology for medical students	4
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SENIOR YEAR.

First Term.

ASTRONOMY	2
MENTAL PHILOSOPHY.—Haven, Baldwin	4
MORAL PHILOSOPHY.—Seth	2
HISTORY.—General Constitutional History	2
CHURCH HISTORY.—Conflict with Heathenism (Uhlhorn)	1

ELECTIVES.

Two to be chosen from the following:—

INTERNATIONAL LAW.—Lawrence	2
LATIN.—Lucretius	2

	HOURS.
MATHEMATICS.—The Calculus	2
GEOLOGY	2
BIOLOGY.—Vertebrate Morphology	4
BOTANY	2

Second Term.

MENTAL PHILOSOPHY.—Continued	2
THEISM.—Flint	2
POLITICAL ECONOMY.—General Principles (Walker)	2
ENGLISH LITERATURE	2
CHURCH HISTORY.—Conflict with Heathenism (Uhlhorn)	1

ELECTIVES.—(Each two hours.)

Three to be chosen from the following:—

BLACKSTONE.—Commentaries on the Law of England.	
HEBREW.—Grammar and reading from Genesis.	4

GREEK.	{ The elective classes are allowed to select the authors read, so that they vary from year to year. Advanced instruction in grammar and idiom is given in all classes.
FRENCH.	
GERMAN.	

LATIN.	
ASTRONOMY.	
METEOROLOGY (Waldo).	
CHEMISTRY.—Advanced instruction in Laboratory.	
GEOLOGY.—Palæontology.	
POLITICAL SCIENCE.—Elements of Jurisprudence.	
CONSTITUTIONAL HISTORY.—United States (Bryce).	
HISTORY.—Middle Ages.	
HISTORY OF PHILOSOPHY.—Greek and Modern.	
SANITARY SCIENCE.	
MATHEMATICS.—Solid Analytical Geometry or Theory of Functions.	
HUMAN ANATOMY and PHYSIOLOGY.—Elective four periods and substituted two periods for English Literature	6

Third Term.

HOURS.

COMPARATIVE PHILOLOGY	4
HISTORY.—Lectures on the Development of European Institutions	2
PHILOSOPHY.—Problems of Philosophy (Hibben)	2
BIBLE	1
ELECTIVES.—Same as Second Term ; except	
MATHEMATICS.—Solid Analytical Geometry or Elliptic Integrals	2
BIOLOGY.—Embryology	6
<i>Throughout the year</i> —Themes and Extemporaneous Speaking.	

PARDEE SCIENTIFIC DEPARTMENT.

This Department was organized in 1866, in accordance with the conditions of a gift from Ario Pardee, Esq., of Hazleton, Pa. The original organization has been from time to time greatly enlarged and extended, largely through the continued munificence of the founder. There are at present two General Courses of study, the Latin Scientific and the General Scientific, and four Technical Courses.

LATIN SCIENTIFIC COURSE.

This course, which leads to the Degree of Bachelor of Philosophy, was designed to meet the wishes of those who desire to pursue a course of liberal study, but will not study Greek. It therefore is the same as the Classical Course except that the time devoted to the study of Greek in that course is given to the pursuit of studies mainly of a scientific character, but throughout the general course of this school great importance is paid to the study of the English language under the special direction of Professor Francis A. March. In the Freshman year the substitutes for Greek are German and English Language and Composition, while in the Sophomore they are various English studies. The method of instruction in each Department is fully dealt with under the course of study in the General Scientific Course. The synopsis which follows will sufficiently explain any other peculiarities of the course.

SYNOPSIS.

LATIN SCIENTIFIC COURSE.

FRESHMAN YEAR.		HOURS.	
MATHEMATICS.	<i>First Term.</i> —Algebra	4	
	<i>Second Term.</i> —Algebra and Geometry, Plane and Solid	6	
	<i>Third Term.</i> —Algebra and Geometry completed, Division B. Geometry and Trigonometry, Division A	6	
LATIN.	<i>First Term.</i> —Livy: Books I. and XXI. Latin Prose. Roman History	4	
	<i>Second Term.</i> —Horace: Odes; Latin Prose	4	
	<i>Third Term.</i> —Horace: Satires and Epistles. Roman Antiquities	4	
	Throughout the year a review of Syntax and Etymology and Exercises in Composition.		
ENGLISH	. . . . .	2
GERMAN.	—Grammar and selections from contemporary prose: <i>First Term</i> , 4 hours; <i>Second and Third Terms</i> , 2 hours.		
THE BIBLE.	—The Bible in English and Coleman's Geography of the Bible, throughout the year		1
HYGIENE.	<i>First Term.</i> —Lectures upon the Essentials of Health	1	
	<i>Throughout the year</i> —Declamations and Themes.		

SOPHOMORE YEAR.

MATHEMATICS.	<i>First Term.</i> —Plane and Spherical Trigonometry, Mensuration, and Plane Analytical Geometry, Division A. Trigonometry, Division B	4
	<i>Second Term.</i> —Plane Analytical Geometry, Division B. Plane and Solid Analytical Geometry, Division A	5
PHYSICS.	<i>Third Term.</i> —Elementary Mechanics (Moore)	4
LATIN.	<i>First Term.</i> —Cicero: De Oratore	4
	<i>Second Term.</i> —Christian Latin. March's Latin Hymns. Roman History and Literature	4
	De Senectute	2
	<i>Third Term.</i> —Cicero: De Officiis; Topics in the History of Philosophy	2

HOURS.

ENGLISH LANGUAGE. <i>First Term.</i> —Trench: The Study of Words (2); and Bunyan's Pilgrim's Progress (4)	6
<i>Second Term.</i> —Rhetoric (1). Spenser: The Faerie Queene (2),	3
<i>Third Term.</i> —Chaucer: The Canterbury Tales	4
FRENCH. <i>Third Term.</i> —Grammar, composition, and translation	4
THE BIBLE.—The Book of Acts. (One hour per week throughout the year)	1
<i>Throughout the year</i> —Declamations and Themes.	

JUNIOR YEAR.

First Term.

PHYSICS.—Heat, Magnetism, and Electricity	4
LATIN.—Tacitus: Agricola and selections from the Annals. Roman Literature of the Silver Age	2
ENGLISH.—Bacon	4
GERMAN.—Grammar and Translation. (From 1903, FRENCH) .	4
THE BIBLE.—The Epistle to the Romans in German	1
BIOLOGY.—Elective, as in Classical Course: Mammalian Anatomy	2

Second Term.

PHYSICS.—Optics, Acoustics	4
ENGLISH.—Milton	} 4
ANGLO-SAXON.—Grammar and Reader (March)	
FRENCH.—Classic Authors. (From 1903 only 2 periods) . .	4
HISTORY.—Constitutional History of the United States . . .	2
THE BIBLE.—The Epistle to the Romans in German	1

BIOLOGY.—Elective with French: Histology	2
ROMANCE LANGUAGES.—Spanish or Italian (optional)	2

Third Term.

LATIN.—Roman Satire: Juvenal and Persius	2
ENGLISH.—Shakespeare	} 4
ANGLO-SAXON	

HOURS.

LOGIC.—Jevons	2
FRENCH	2
THE BIBLE.—The Epistle to the Romans in German	1
ELECTIVES.—Four hours to be chosen from the following:—	
MATHEMATICS.—The Calculus	4
GEOLOGY	2
HISTORY.—Constitutional History	2

BIOLOGY.—General Biology	4
<i>Throughout the year—Declamations, Themes, and Debates.</i>	

SENIOR YEAR.

First Term.

ASTRONOMY.—Practical Astronomy, with work in Observatory, .	2
MENTAL PHILOSOPHY.—Haven, Baldwin	4
MORAL PHILOSOPHY.—Seth	2
HISTORY.—General Constitutional History	2
BIBLE.—Conflict with Heathenism (Uhlhorn)	1

ELECTIVES.

LATIN.—Lucretius	2
MATHEMATICS.—The Calculus	2
POLITICAL SCIENCE.—International Law	2
BOTANY	2
GEOLOGY	2
BIOLOGY.—Vertebrate Morphology	4

Second Term.

MENTAL PHILOSOPHY.—Haven, Baldwin	4
THEISM.—Flint	2
ENGLISH LITERATURE	2
POLITICAL ECONOMY: The General Principles (Walker) . . .	2
BIBLE.—Conflict with Heathenism (Uhlhorn)	1

Six hours of the following *electives* are to be chosen:—

BLACKSTONE.—Commentaries on the Law of England	2
HEBREW.—Grammar and Reading from Genesis	4

GREEK	} The class is allowed to choose from a number of authors what authors they will read	2
FRENCH		
GERMAN		
ASTRONOMY		2
METEOROLOGY		2
CHEMISTRY.—Advanced instruction in Laboratory work . . .		2
GEOLOGY.—Palæontology		2
POLITICAL SCIENCE.—Elements of Jurisprudence		2
CONSTITUTIONAL HISTORY.—United States (Bryce)		2
HISTORY.—Middle Ages		2
HISTORY OF PHILOSOPHY.—Greek and Modern		2
MATHEMATICS.—Solid Analytical Geometry or Theory of Functions		2
SANITARY SCIENCE		2
BIOLOGY.—Human Anatomy and Physiology		6

Third Term.

COMPARATIVE PHILOLOGY	4 .
HISTORY.—The Development of European Institutions . . .	2
PHILOSOPHY.—Problems of Philosophy (Hibben)	2
BIBLE	1
ELECTIVES, as above, except Embryology for Human Anatomy and Physiology	6
<i>Throughout the year—Themes, Forensics, and Debates.</i>	

GENERAL SCIENTIFIC COURSE.

This course leads to the degree of Bachelor of Science, and consists of a curriculum in which Mathematics, the Modern Languages and their Literatures, especially English, and the Natural and Physical Sciences receive principal attention. It includes, however, the more general studies of the Arts Course, such as History, Logic and Rhetoric, Mental and Moral Philosophy.

The Mathematics of this course is the same as the Mathematics of the Technical Courses. French and German are begun in the Freshman year and are pursued

with great breadth and particularity. The student's attention is directed to the study of the literatures of these languages in the endeavor to supply, so far as may be possible, the liberal culture ordinarily to be obtained only by the classical studies, but particular stress is laid upon the very thorough-going course in English, a description of which follows:—

ENGLISH LANGUAGE AND LITERATURE.

Professors Francis A. March and F. A. March, Jr.

In the Freshman Class there is, first of all, a thorough drill in Analysis, Parsing, and the Syntax of sentences. This is the basis of the future work, and a mastery of the general principles of Syntax, and skill in the solution of familiar idioms is brought constantly into requisition. Then before the more advanced work in Philology is undertaken, other languages are studied. French and German (as in the Classical Course Latin and Greek) come in as parts of the organized scheme of linguistic study, and are so pursued as to become a means of special culture in English.

Sophomores take up in the first term Trench on the Study of Words and Bunyan's Pilgrim's Progress; in connection with which English Grammar is studied. The Grammar subjects for this term are Syntax, Grammatical Equivalents, Rhetorical Forms, and Historical Elements. On each, daily recitations are heard, and the lessons learned are constantly illustrated by the text under review. The whole story of the Pilgrim's Progress is read, the allegorical meaning called for part by part, and salient doctrinal points noticed.

The staple of daily drill, however, is found in connection with the minute and careful treatment of selected passages. These are studied clause by clause and word by word. The Syntax is first made clear, then words are taken up; synonyms and phrases grammatically equivalent are brought into comparison, and the student is taught to feel an intelligent preference for one or another form of expression, as it may promote perspicuity, liveliness, or other traits of a clear and vigorous style. In the treatment of single words, also, the German and French are called for, and as far as practicable in the Scientific Course the Latin. The laws of change, the derivation, the root, the radical idea, kindred words, the primary meaning, changes in the meaning with the connection of thought, together with such other lines of inquiry as are suggested by Trench, as indications of history, character, moral suggestions, and the like; poetical forms of frequent occurrence are also specially noted, and the collocation of words discussed, both with respect to syntax and the rythmical cadences of speech.

In connection with this daily drill, the life and times of Bunyan are discussed in writing by each member of the class, and his diction compared with that of other standard works, and especially with the Bible. In this part of the work students are directed by questions and references, but are expected to look up information everywhere.

This system of daily drill on the best passages, reports on other readings, and weekly essays on topics growing out of the discussions of the life and times of the author, is found to lead the student on by sure and rapid steps to

an intelligent appreciation of the author's works, his place in literature, and on the whole to the best mastery of his genius.

The same general plan is pursued progressively through the course, with changes, from term to term, in the topics embraced in the drill.

The Sophomores (second term) read Spenser's *Faerie Queene*, with the same concentration upon representative passages, the special drill topics being derivation, romance of chivalry, and Spenserian stanza. In the third term Chaucer (*Canterbury Tales*) is the basis of work. Several of the tales are read and discussed, but the famous Prologue is the special subject of study and philological drill. All the results of previous works are kept constantly in review. This is an emphatic feature of the method. "A line of questions once begun is always kept up." The special drill topics this term are Phonetic Elements, Orthographic Elements, a review of Historical Elements, and Criticism of Uncertain Text.

The Juniors (first term) take for philological study selected essays of Bacon; they prepare reports and criticisms of others of his works, and of his character, life, and times, in weekly written papers. During the second term they study Anglo-Saxon. They also read Milton's *Paradise Lost*. The Classical, Latin Scientific, and General Scientific Juniors here recite together (as they do in all subsequent Anglo-Saxon and English studies of the course). The philological study is mainly directed to the deduction of English words and forms from Anglo-Saxon. The paradigms and the text read are examined word by word in this view. Special objective points are

Poetical Forms and Epic Art. In the third term Anglo-Saxon is continued, and Shakespeare's play of Julius Cæsar is read. The philological study is used mainly to clear up, enrich, and impress the thoughts of Shakespeare. The characters and the structure of the play are studied. Weekly written papers are required from each student upon selected topics connected with Shakespeare's life and times, his genius, his dramatic art, and the like.

In the Senior year the first term is given to a rapid and general survey of English literature by means of a compendium and class discussions, and conversations. In the second term a representative work of a representative author, selected by the professor, is studied with a view to more extended researches in philology and criticism, and to one elaborate essay by each member of the class, to be handed in at the close of the term. What is known as the F. A. March Prize is awarded on the basis of this term's work. During the third term, Senior year, Professor Whitney's Lectures on Language are studied. The work of the entire course in Comparative Philology is reviewed and co-ordinated, and advanced work pursued by means of lectures and class discussions.

HISTORY.

The President and Mr. Roberts.

In this course, a course in the Introduction to the Middle Ages (Emerson) and the History of the Middle Ages, with special reference to the development of European institutions, is given in the third term of Sophomore year.

All the courses in History and Political Science described under the Classical Course are also open to students of this Department.

SYNOPSIS.

GENERAL SCIENTIFIC COURSE.

FRESHMAN YEAR.

	HOURS.
MATHEMATICS.—Algebra, Trigonometry, Mensuration, and Analytical Geometry	4-5-5
ENGLISH.—March's Method. Grammar	2
FRENCH.—Grammar, composition and translation. (Third term)	2
GERMAN.—Grammar, composition and translation	2
CHEMISTRY.—Text-book, Lecture, and Laboratory work in Elementary and Organic Chemistry. (Four hours first term, two hours second and third terms)	4-2-2
DRAWING.—Industrial Drawing. <i>First and Second Terms</i>	2
THE BIBLE.—Old Testament in English and Coleman's Geography of the Bible. (One hour throughout the year.)	1
HYGIENE.—Lectures.	
<i>Throughout the year</i> —Declamations and Themes.	

SOPHOMORE YEAR.

MATHEMATICS. <i>First Term</i> .—Analytical Geometry and Differential Calculus	4
<i>Second Term</i> .—Differential and Integral Calculus	5
PHYSICS. <i>Third Term</i> .—Elementary Mechanics (Moore)	4
ENGLISH. <i>First Term</i> .—Trench on the Study of Words.	
Bunyan: The Pilgrim's Progress	6
<i>Second Term</i> .—Rhetoric. Spenser: The Faerie Queene	3
<i>Third Term</i> .—Chaucer: Canterbury Tales	4
FRENCH AND GERMAN.—Language and literature	4
HISTORY.—Middle Ages	2
THE BIBLE.—The Acts of the Apostles in French	1
<i>Throughout the year</i> —Declamations and Themes.	

JUNIOR YEAR.

HOURS.

PHYSICS.—Heat, Electricity, Magnetism, Optics, Acoustics. <i>First and Second Terms</i>	4
ENGLISH.—Bacon, Milton, and Shakespeare. (Four hours per week throughout the year)	4
ANGLO-SAXON.—March's Grammar and Reader. (Four hours per week second and third terms)	4
FRENCH AND GERMAN. (Two hours per week each throughout the year)	2
LOGIC.—Jevons	2
BIOLOGY. <i>First Term</i> .—Mammalian Anatomy	4
HISTORY.—Constitution of the United States. (Second term) .	2
THE BIBLE.—New Testament Epistles in German	1

ELECTIVES.

MATHEMATICS.—Calculus	4
HISTORY. <i>Third Term</i>	2
GEOLOGY. <i>Third Term</i>	4
BIOLOGY:— <i>Second Term</i> .—Histology (with French)	2
<i>Third Term</i> .—General Biology	4

SENIOR YEAR.

ASTRONOMY.—Practical and Theoretical. (First term)	2
MENTAL PHILOSOPHY. <i>First and Second Terms</i>	4
MORAL PHILOSOPHY AND THEISM	2
COMPARATIVE PHILOLOGY. <i>Third Term</i>	4
POLITICAL ECONOMY. <i>Second Term</i> (Walker)	2
MODERN LANGUAGES AND LITERATURES. (Throughout the year.)	4
BIBLE	1
ELECTIVES, as in the Latin Scientific Course.	

Throughout the year—Themes and Extemporaneous Speaking.

DEPARTMENT OF ENGINEERING.

There are at present embraced in the curriculum three courses in ENGINEERING : Those of Civil, Mining, and Electrical Engineering. The location of the College is peculiarly favorable for such engineering schools. The city of Easton is a centre of railroads and canals, while bridges, foundries, pipe works for water and gas, cement works, rolling mills, repair shops, and many other industrial works are near at hand. Mines of iron, anthracite coal, and zinc are easily accessible, and extensive quarries of limestone, steatite, and slate are to be found in the immediate vicinity, and afford excellent opportunities for the study of mining operations. The demand, created by the great number of mechanical works in connection with these natural conditions and their development, for special trained chemists has led to the establishment of a special course in CHEMISTRY.

COURSES OF INSTRUCTION.

The instruction in all the engineering courses is substantially the same during the first two years of the course, except that the electrical engineers substitute the study of physics and practical work in the physical laboratory for a part of the surveying, field, and office work of the other courses.

The following branches are common to all the courses :—

MATHEMATICS.

Professors Hall and Folwell and Messrs. Moffit and Lucke.

The attention of applicants for admission to technical courses is called particularly to the necessity of thorough

preparation in Mathematics. All candidates should be thoroughly grounded in fundamental principles and operations, and it is strongly recommended that the Preparatory Mathematics be carefully reviewed just prior to entrance. Readiness and accuracy is required not only in demonstrating propositions, but also in solving problems.

Those who are prepared in the additional Algebra requirement and in Plane Trigonometry, may, after a satisfactory examination, join an advanced division of the class. The Advanced Algebra will be required in 1903 and Plane Trigonometry in 1905.

While the study of Mathematics as mental discipline will not be overlooked, the object will always be to give the student that working knowledge of the subject that will enable him to apply, accurately and readily, mathematical principles to the solution of engineering problems.

Higher Algebra, Plane and Spherical Trigonometry, Logarithms, Mensuration, and Plane Analytical Geometry are given in the Freshman year. The following subjects are given in the Sophomore year: Analytical Geometry of three dimensions, Differential and Integral Calculus, Differential Equations, and Least Squares.

· ASTRONOMY.

In addition to a course in General Astronomy similar to that of the Classical Course, the Civil Engineers are given a course in Practical Astronomy. This course keeps constantly in mind the needs of the Engineer. It includes a careful study of the Transformation of Astronomical Co-ordinates, a short discussion of Parallax and

Refraction, a careful discussion of the construction, adjustment, and use of Astronomical Instruments, of the methods of determining Time and Latitude by means of the Sextant, of Time by the Transit Instrument, of the methods of determining Longitude, and of the methods of determining Latitude by the Zenith Telescope. The students are required to make frequent observations with the Sextant and Transit Instrument.

SURVEYING.

Professor Folwell.

For Drawing, Laboratory, and Field work an "hour" consists of three hours; for other studies, of one hour.

This course, progressive and practical, is as follows:—

SOPHOMORE YEAR.

HOURS.

<i>First Term.</i>	Lectures, Recitations, Field and Office Work. Theory of Chain, Compass, and Transit Surveying; Leveling; Adjustment and Use of Surveying Instruments	2
<i>Second Term.</i>	Lectures, Recitations, and Office Work. Pen and Colored Topography; Location and Construction of Roads, Streets, and Pavements .	2
<i>Third Term.</i>	Lectures, Recitations, Field and Office Work. Topographical Surveying; Survey of a small area; Map of Survey; Notes	2

JUNIOR YEAR.

<i>First Term.</i>	Lectures, Recitations, Field and Office Work. Railroad Reconnaissance and Location . . .	3
<i>Second Term.</i>	Lectures, Recitations, and Office Work. Railroad Construction; Map, Profile, Plans, Earthwork Calculations, Bills of Material, Estimates, Specifications, and Contracts . .	2

HOURS.

<i>Third Term.</i>	Lectures and Recitations. Railroad Economics ; Field Work ; Topographical Surveying ; Sur- vey of an extended area ; Stadia, Plane Table, Camera, Notes	3
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SENIOR YEAR.

<i>Third Term.</i>	Geodesy ; Lectures, Recitations, Field and Office Work	2
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DRAWING.

Professor Hall and Messrs. Moffit and Lucke.

Instruction in the Elements of Mechanical Drawing includes the use and testing of drawing instruments and materials, the drawing of lines, pen tinting and shading, flat tinting with brush, and wet and dry shading in ink and in colors, free-hand pen shading ; plans of buildings, instrumental copying, traced copying, and transfer of drawings, blue prints, and working drawings.

In addition to text-book exercises, free-hand sketches and mechanical drawings in ordinary orthographic, isometric, and clinographic projections are made from models constructed for this purpose.

The drawing for the first two years is arranged as follows :—

FRESHMAN YEAR.

<i>First Term.</i>	Elements of Mechanical Drawing. Plane Problems. Free-hand Lettering.	
<i>Second Term.</i>	Elementary Projections. Working Drawings.	
<i>Third Term.</i>	Projections, including Shades and Shadows. Iso- metric and Cabinet Projections. Model Drawing. Sketching.	

SOPHOMORE YEAR.

<i>First Term.</i>	Descriptive Geometry. Plates. Plotting Surveys.
<i>Second Term.</i>	Descriptive Geometry. Plates. Pen and Colored Topography.
<i>Third Term.</i>	Machine Drawing. Map of Survey.

All the students in the Engineering, Chemical, and General Scientific Departments take the first year's work in Drawing, as shown above. All the students in the Engineering Departments take the second year's course. During the Junior and Senior years the drawing in the Technical Departments includes the following: Maps of Surveys, Graphic Statics, Constructions in Stone Cutting, Bridge Drawing, and graphical methods of locating faulted beds and veins.

MINERALOGY AND GEOLOGY.

Professor Peck.

Students in the Technical Courses begin work in this Department the first term Junior year, and complete it the second term Senior year, with the exception of the students in the Mining Engineering course, who continue through the third term of the Senior year, taking the regular field work required of the Senior classicals, and in addition a short course in the geology of ore deposits, consisting of one lecture per week.

The first term Junior year is devoted to Crystallography, in which Elements of Crystallography, by G. H. Williams, is used as a text book. The course is supplemented abundantly by laboratory practice.

The second term's work consists in a systematic review of mineral species, more especial attention being paid to their chemical and crystallographic relations and to their mode of occurrence in Nature. Instruction is given by lectures, which are illustrated by a study collection, consisting of some two thousand specimens, including the most important species.

The third term's work consists in a discussion of mineral aggregates, or how minerals combine to form igneous, metamorphic, and sedimentary rocks, which discussion is in direct preparation for the work in Geology which follows in the Senior year.

The Department has a large projecting apparatus to be used in demonstrating before a class the optical properties of the rock-forming minerals by means of polarized light, to which there is also a large microscope attachment for use in projecting upon a screen thin sections of rocks for the purpose of showing their structure and mineralogical composition. Also five reflecting goniometers, with horizontal circle and of the most recent pattern, have been purchased, to be used by the more advanced students in the technical courses in determining the geometrical constants of crystals; and a new and improved polariscope to be used in the study of crystal optics. (All of the above instruments were made by Fuess, in Berlin.) Four petrographical microscopes are also in the possession of the Department, and instruction will be given to the more advanced students in modern petrographical methods, *i. e.*, in the preparing and mounting of thin sections for study with the microscope.

The course in Mineralogy of the Junior year is fol-

lowed in the Senior year by a course in the elements of Geology, in which Prof. W. B. Scott's text-book, *An Introduction to Geology*, is followed. The first term is devoted to Dynamical, Structural, and Physiographical, and the second term to Historical, Geology.

Students pursuing the course in Mining Engineering will, in the third term Senior year, take field work with the classical elective division, and will be given also a short course, consisting of one lecture per week, in the geology of ore deposits.

The text-book in the Technical Courses is Williams' *Crystallography*. Crystallography is taught with the aid of two hundred and fifty models in wood. Instruments are provided for the study of the optical properties of minerals. There is also a mineral dresser, a lathe run by electricity, and all the apparatus for the preparation, mounting, and microscopical study of thin mineral and rock sections.

CHEMISTRY.

Professor Hart, Dr. Shimer, and Mr. Meade.

The study in this Department begins with a course of lectures on General Chemistry combined with study of a text-book. In connection with these lectures each student is required to work in the Laboratory under proper direction.

In the Mining Engineering and Electrical Engineering Courses this course is followed in the Junior and Senior years by courses in qualitative and quantitative analysis. Special attention is given to the analysis of engineering materials, and the modern quick methods are thoroughly taught, theoretically and practically.

Partial or special students may enter the Laboratories at any time, provided they have the necessary knowledge of General Chemistry to work advantageously. Advanced students will be afforded opportunity for continuing their studies, or for conducting investigations in Organic or Inorganic Chemistry.

PHYSICS.

Professor Moore and Mr. Lucke.

The studies in this Department in all the courses at present occupy four recitations or lectures a week, beginning with the third term, Sophomore year, and continuing through the first and second terms of the Junior year.

In Mechanics there is a thorough mathematical discussion, accompanied with lectures and experiments.

In other subjects text-book study is accompanied with illustrative lectures, aided by apparatus which is continually enlarged and improved.

To the students of the Technical Courses an optional course in Laboratory Physics is offered. Experiments in mechanics, sound, heat, electricity, magnetism, and light are performed by the student, thus illustrating and emphasizing the principles of each respective subject.

For the advanced studies of the Technical Courses in Analytical Mechanics and other topics of Mechanical Engineering see pages 71 and 78.

In Physics, as well as in Astronomy, Chemistry, Engineering, and Natural History, the studies are illustrated by wall charts, twelve hundred in all, many of which give illustrations not otherwise easily accessible to students.

HISTORY AND POLITICAL ECONOMY.

The Juniors pursue a course in the History of the Constitution of the United States for one term, and the Seniors a course in Political Economy for one term. (*Vide* pages 23 and 25.)

RHETORIC AND ELOCUTION.

Prof. F. A. March, Jr.

Besides the study of text-books, weekly written essays are required, and declamations in class or before the College. *Extemporaneous Speaking* is also cultivated. In those studies, such as Mental Philosophy, in which the recitation can be had by topics, students are required to take the floor daily and present an outline of the author's thought, with such additions as they choose in the form of a lecture to the class. Extemporaneous (unwritten) debates are also had in class. The Juniors, during the third term, and the Seniors deliver unwritten addresses on subjects of their own choice, instead of selected declamations. The other classes speak selected pieces. Great pains are taken to encourage the habit of simple and earnest communication of connected thought. For the training in these branches to be had in the College Literary Societies, see page 109.

A Thesis is required in all the Technical Departments as a condition of graduation. It must show evidence of original investigation upon a subject appropriate to the Department and approved by the Professor in charge. It must be neatly written upon regulation paper, bound and illustrated with such photographs, drawings, and sketches as may be needed. It will be prepared during

the latter part of the Senior year, and an opportunity will be given at the close of the course to read and defend the same before a public audience. These Theses, accompanied by their drawings, photographs, &c., if accepted, become the property of the College, and are deposited in the Libraries of the various Departments.

DEPARTMENT OF CIVIL ENGINEERING.

Professors J. M. Porter and Folwell, and Messrs. Moffit and Lucke.

The design of this course is to furnish such theoretical instruction and engineering practice as will prepare its graduates for immediate usefulness in the field and office, and, after a moderate amount of professional experience, enable them to fill positions of trust and importance in their chosen profession.

Instruction is given by means of lectures and recitations, accompanied by a large amount of practice in the field, laboratory, and drafting-room. Theoretical principles are illustrated and explained by such problems and examples, taken as far as possible from actual engineering practice, as will best serve the purpose. In addition to the regular lectures, occasional ones are given by prominent engineers, in active practice, upon their specialties.

During the course visits are made to engineering structures, mills, &c., in connection with their special study. During the Senior year a tour of inspection is made of the prominent industries not otherwise accessible.

FACILITIES FOR INSTRUCTION.

The Department has a large equipment of instruments necessary for the various branches of engineering field

practice, including chains, tapes, compasses, plane-tables, transits, levels, barometers, base-rods, standard base-line tapes and pulling apparatus, sextants, solar compasses, solar attachments for transits, floats, and current meters. A twelve-inch portable altitude and azimuth instrument of the latest and best form, from Fauth & Co., Washington, D. C., is used for instruction in Geodesy and Practical Astronomy. It is read by micrometer microscopes to single seconds, both of altitude and of azimuth, and is provided with level for double zenith distances. A precision level of the latest design is employed in instruction in precise leveling. The astronomical observatory contains an equatorial telescope, transit, an astronomical clock, meteorological instruments, &c.

For use in the lecture-room there are numerous models of the various types of bridges and roofs, several complete sets of full-weight sections of I and deck beams, channels, Z bars, angles, Phoenix and Keystone Columns, and the standard built sections; five foot section of a full weight plate girder, numerous full-weight sections of riveted joints, representing bridge and boiler work, hand and power riveting; sections of steel rails for railroads and street railways, cable slots, &c.; drawings, photographs of engineering structures when completed and during construction; slide rules and other calculating machines.

The Department also has a full-weight pin-connected highway bridge of fifty feet span and fourteen feet roadway, weighing twelve tons, together with all false work and tools necessary to erect the same.

The main Testing Laboratory is thirty feet by sixty

feet in dimensions, well lighted, and contains an Olsen and a Riehle Automatic Machine of one hundred thousand pounds capacity, arranged for tension, compressive, and transverse testing; a sixty-thousand pound Hydraulic Machine, a four-thousand pound wire tester, and a smaller machine for testing cord, twine, &c.; a transverse machine for specimens up to five feet in length, and provided with micrometers for measuring deflection; a torsion machine; a rattler for abrasion test of paving brick; improved elongation meters, and numerous smaller micrometers. The power for the laboratory is furnished by a ten-horse power electric motor.

The Cement Laboratory contains two two-thousand and one one-thousand pound machine for testing cement by tensile, compressive, or transverse stress; a machine for moulding briquettes under pressure, and a power-driven Boehme Hammer; a jig; a boiler for boiling tests; large immersion tanks, with running water, and the necessary moulds, sieves, scales, moist closets, &c. The power for this laboratory is furnished by a three-horse power electric motor.

The Hydraulic Laboratory contains a large vertical tank arranged for making experiments on the flow of water through orifices and nozzles under heads up to three hundred feet, as well as several tanks for use under low heads; three tanks, two of them thirty feet long, for weir experiments; a turbine, Backus wheel, and other water motors; a Venturi meter, a measuring tank of a capacity of four thousand gallons, a smaller one of three hundred gallons, scales, and other appliances for measuring the water used in experiments, as well as arrange-

ments for testing meters, nozzles, and fire hydrants, and for lecture-room illustrations. There is also connected with the laboratory a one-million gallon Worthington duplex pump. The laboratory is connected with a large cistern by four lines of sewer pipe of different sizes, each three hundred feet long, and arranged for making tests of joints and various experiments on flow of water.

The shop, which is in charge of a skilled mechanic, contains an engine lathe, drill press, a planer, a mineral lathe and saw, and the other necessary appliances for preparing test specimens, models, and apparatus, and for repair work.

The Library contains a number of the best and latest books and periodicals upon Engineering subjects, and students are encouraged to make free use of the same.

SPECIAL STUDIES.

The first two years of the course are spent in laying a foundation of pure mathematics, drafting, surveying, chemistry, and modern languages. The last two years are devoted to the more purely professional work, which may be divided as follows:—

SURVEYING.—The theoretical study of surveying extends over four terms, the field practice being confined almost entirely to the Summer School in Surveying. This school is at present optional, but becomes a required part of the course with the year of 1901–02. The course in surveying includes land surveying, leveling, topography, hydrography, triangulation, railroad reconnaissance and location, and the elements of geodesy. Particular attention is given to have the students become rapid and at the same time accurate instrument men, to be able to handle a corps advantageously, to keep neat and systematic notes, and make a clear and correct map. No error is allowed in the field or map which is not within the limits observed in current practice.

ANALYTICAL MECHANICS is taught by means of lectures and recitations, treating upon forces, their composition and resolution,

conditions of equilibrium, centre of gravity, moment of inertia, theory of motion, momentum, impact, energy, and friction; solution of numerous problems.

RESISTANCE OF MATERIALS.—This subject is treated by means of lectures, text-books, and laboratory practice sufficient to thoroughly fix in the mind the principles of stress and strain, the behavior of materials under tension, compression and shearing stresses, resistance of pipes and riveted joints, strength and flexure of simple, cantilever, restrained, and continuous beams variously loaded; formulas for columns, torsion, shafts; working-strengths and fatigue of materials; designing of rolled and built beams, shafts, and columns according to standard specifications. Visits are made in connection with this course to pipe and boiler works.

MATERIALS OF CONSTRUCTION.—This course is to familiarize the student with the qualities, requirements, method of testing, preserving, and cost of material used in engineering structures. In connection with this course, visits are made to blast furnaces, rolling and wire mills, quarries, and cement works.

BRIDGES AND ROOFS.—This course includes the computation of stresses in the various forms of trusses by both analytical and graphical methods. Following this, each student designs a plate-girder, and then a pin-connected bridge, according to standard specifications, making full computations, working-drawings, bill of material, and estimate of cost for same; special attention being given to an economical design, and to joints and other details. Actual practice is given by the erection each year by the students of a full-weight, pin-connected bridge belonging to the Department. Visits are made to bridges, and their details and general design are criticised, upon which written reports are made.

HYDRAULICS.—This subject is treated by recitations and laboratory work, embracing the study of head, velocity, and discharge through orifices, tubes, pipes, canals, and rivers; measurement of water-power; testing hydraulic motors.

MUNICIPAL ENGINEERING, which is preceded by a course in Bacteriology, is taught by lectures and recitations, supplemented by practice in designing. It covers the supplying of water, and construction of reservoirs, stand-pipes, and pumping plants; the purification of water, and its distribution through mains and appurtenances; methods of collecting sewage, both dry and water-carried,

and of disposing of this and of garbage, including determining the size and capacity of sewers, mains, laterals, inlets, flush tanks, &c.; cleaning and lighting streets; drainage and ventilation of buildings; estimates and specifications. In connection with this study, frequent visits are made for the purpose of inspecting existing works, completed and under course of construction. Each student is required to design a system of distribution or sewerage for some imaginary town, making complete maps, bill of material, and detailed estimate of cost.

RAILROAD ENGINEERING.—The work in railroad engineering includes the mathematical discussion of curves, frogs, switches, and crossings; economical locations as to grades and curves; calculation of earthwork. The field practice consists of a reconnoissance and location of a line upon such ground as will best illustrate the problems occurring in actual practice, making a complete map, and designing such details as drains, culverts, road-crossings, &c., calculating earthwork; complete set of notes of all work done in field and office; estimating cost, including equipment.

MASONRY CONSTRUCTION.—This course treats of the requisites of stone, brick, and cement; practice in the testing of these materials; the method of preparing mortar and concrete; strength of stone and brick masonry, foundations, dams, retaining walls, bridge piers and abutments; culverts and arches; study of existing structures; specifications and cost.

ROADS, STREETS, AND PAVEMENTS.—This course comprises the reconnoissance, location, construction, and maintenance of towns and country roads, city streets, and pavements; tramways and street railways, including cable, elevated, and electric roads; details of construction; street cleaning; testing the quality of road material; specifications; estimates.

ASTRONOMY is taught by means of text-books and lectures accompanied by practice in the field and observatory. The practical work includes the use and adjustment of instruments, and the determination of time, latitude, longitude, and azimuth.

GEODESY.—This course includes the study of the instruments and the methods employed in measuring base lines, establishing stations measuring angles, reducing triangulations, projecting maps, &c.

MACHINERY.—This course includes the theoretical principles of the steam-engine and other prime movers. Examinations and

reports are made upon the power plants of some of the manufacturing establishments of the city, and upon locomotives, elevators, and cranes. The student is made familiar with the use of the steam indicator, planimeter, and speed indicator, and has practice in interpreting indicator diagrams.

The Department invites its friends and students to send specimens of materials, drawings, models, or photographs of bridges, machinery, or other engineering works. Illustrated circulars and price lists are also desired. Such contributions will be labeled with the donor's name and placed on exhibition, and when possible used in the work of the Department.

SYNOPSIS.

COURSE IN CIVIL ENGINEERING.

FRESHMAN YEAR.

First Term.

	HOURS.*
MATHEMATICS.—Algebra (Wentworth)	4
CHEMISTRY.—Lectures and Recitations (Hart)	4
MODERN LANGUAGES.—German Grammar, Composition, and Translation, 2; English, 2	4
DRAWING.—Elements of Industrial Drawing; Plane Problems, 2	
HYGIENE.—Lectures on Health	1
THE BIBLE	1

Second Term.

MATHEMATICS.—Trigonometry (Crockett's)	5
CHEMISTRY.—Lectures and Laboratory Practice	2
MODERN LANGUAGES.—French, 2; German, 2; English, 2	6
DRAWING.—Projections; Plates; Free-hand Lettering	2
THE BIBLE	1

Third Term.

MATHEMATICS.—Spherical Trigonometry and Analytical Ge- ometry (Wentworth); Mensuration (Hall)	5
MODERN LANGUAGES.—French (continued), 2; German (con- tinued), 2; English, 2	6
DRAWING.—Projections (Model Drawing); Plates; Map of Surveys	2
CHEMISTRY	2
THE BIBLE	1

Throughout the year—Themes.

* An "hour" indicates one hour of recitation or an equivalent period of three hours of field or laboratory work.

SOPHOMORE YEAR.

First Term.

	HOURS.
MATHEMATICS.—Analytical Geometry (Bowser), Differential Calculus (Hall)	5
DESCRIPTIVE GEOMETRY	2
MODERN LANGUAGES.—French, 2; German, 2; English: Trench on Words, 2	6
SURVEYING.—Lectures, Recitations, Field and Office Work. City and Mine Surveying; Leveling; Map of Survey; Notes; Location and Construction of Roads, Streets, and Pavements	2
CHEMISTRY	2
THE BIBLE	1

Second Term.

MATHEMATICS.—Differential and Integral Calculus (Hall) . .	5
DESCRIPTIVE GEOMETRY	3
MODERN LANGUAGES.—German, 2; French, 2; Rhetoric, 1 . .	5
DRAWING—SURVEYING.—Pen and Colored Topography . . .	2
ANALYTICAL CHEMISTRY	2
THE BIBLE	1

Third Term.

MATHEMATICS.—Least Squares and Differential Equations . .	5
MECHANICS.—Elementary Mechanics (Moore)	4
DESCRIPTIVE GEOMETRY.—Map of Survey	2
CHEMISTRY.—Lectures and laboratory	2
SURVEYING.—Lectures, Recitations, Field and Office Work. Topographical Surveying; Survey of a small area; Map of Survey; Notes	2
THE BIBLE	1

SUMMER SCHOOL OF SURVEYING (in vacation) . . . Three weeks.

JUNIOR YEAR.

First Term.

PHYSICS.—Heat, Magnetism, and Electricity	4
APPLIED MECHANICS	4
CHEMISTRY.—Metallurgy of Iron and Steel	2

	HOURS.
MINERALOGY.—Crystallography	2
SURVEYING.—Lectures, Recitations, Field and Office Work.	
Railroad Reconnoissance and Location	3
THE BIBLE	1

Second Term.

MECHANICS.—Theory and Conditions of Equilibrium. Centre of Gravity. Moment of Inertia. Solution of Problems .	4
PHYSICS.—Acoustics; Optics	4
MINERALOGY.—Descriptive	2
RESISTANCE OF MATERIALS	3
ELECTRIC RAILWAYS	2
RAILROADS.—Theory of Location and Construction	2
THE BIBLE	1

Third Term.

MACHINERY.—Steam Engine, Elevators, Cranes. Lectures and Text-book	4
RESISTANCE OF MATERIALS.—Elasticity and Strength of Wood, Stone, and Metals. Theory of Columns, Shafts, and Beams. Testing Laboratory	4
SURVEYING.—Lectures and Recitations. Railroad Economics; Field Work; Topographical Surveying	2
MINERALOGY	3
BACTERIOLOGY	2
THE BIBLE	1
THEMES.	

SUMMER SCHOOL OF SURVEYING (in vacation) . . . Three weeks.

SENIOR YEAR.

First Term.

BRIDGES AND ROOFS.—Theory and Calculation of Stresses in Simple Trusses by Analytical and Graphical Methods. Designing of a Roof-truss	6
HYDRAULICS.—Theory of Hydrostatics. Efflux of Water from Orifices and Tubes. Weirs. Flow in Pipes, Canals, and Rivers. Hydraulic Motors. Laboratory Work	5
GEOLOGY	2

	HOURS.
ASTRONOMY.—Descriptive Astronomy. Text-book and Lectures	2
BIBLE	1

Second Term.

BRIDGES.—Theory and Calculation of Stresses in Continuous, Cantilever, and Suspension Bridges by Analytical and Graphical Methods. Designing of Plate-girders and Riveted Bridges, with Working Drawings. Estimates and Contracts	6
MUNICIPAL ENGINEERING. WATER SUPPLY.—Source and Supply of Water for Towns. Designing, Construction, and Maintenance of Systems	3
MASONRY CONSTRUCTION.—Testing Laboratory	2
GEOLOGY.—Historic and Dynamic. Text-book and Lectures .	2
ASTRONOMY.—Practical Astronomy. Observatory Work . . .	2
POLITICAL ECONOMY	2
BIBLE	1

Third Term.

BRIDGES.—Design of a Pin-connected Bridge, with Working Drawings. Bill of Material. Estimates and Contracts .	6
MUNICIPAL ENGINEERING; SANITARY.—Designing, Construction, and Maintenance of Sewerage Systems. Sewage Disposal. Drainage, Ventilation, and Heating of Buildings. Street Cleaning and Garbage Disposal	5
SURVEYING.—Field and Office Work. Precise Triangulation and Leveling. Elements of Geodesy	2
DRAWING.—Bridge Drawing. Maps. Law of contracts . . .	2
ERECTION.—Designing of False Work, and Erecting of Bridges. Practice in Erecting a Full-weight Pin-connected Bridge.	
THESIS for Graduation.	
BIBLE	1

MINING ENGINEERING DEPARTMENT.

Professor Hall and Messrs. Moffit and Lucke.

The aim of the course in Mining Engineering, leading to the Degree of Engineer of Mines, is to provide a good education; to lay in a thorough manner a sound foundation in Engineering, and to give special preparation in Mining, Geology, Chemistry, Metallurgy, and Assaying.

The courses in Surveying, Analytical Mechanics, Resistance of Materials, Materials of Construction, and Railroad Engineering are given in the Civil Engineering Department, and have been fully described.

The courses in Mathematics, Languages, Physics, and Pure Graphics are the same in all the Engineering Departments, and have been presented.

A course in the Theory of Steam Engineering is followed by Graphical Constructions and Computations.

In Mechanical Engineering, after the courses in Analytical Mechanics, Resistance of Materials, Materials of Construction, and Graphic Statics, a term of Machine Design and Construction is given.

In Surveying, the theory and practice extends through the first three years, and includes: Chain, Compass, and Transit Surveying; Adjustment of Instruments; Leveling; City Surveying; Location and Construction of Roads, Streets, and Pavements; Topographical Surveys; Railroad Reconnaissance, Location, and Construction, with Profile Plans, Earthwork Calculations, Bills of Material, Estimates, Specifications, and Contracts; Theory of Mine Surveying, and the actual survey of a mine.

Following the course in Electricity as given in Physics, two periods each week for one term are devoted to the

study of Electrical Machinery with selected laboratory work, having especial reference to the application of electricity to mining operations.

The course in Drawing includes: Elements of Mechanical Drawing, tracings and blue prints; Free-Hand Drawing and Lettering; Descriptive Geometry; Topographical Drawing; Graphic Statics; Map Drawing; Machine Drawing and Design. Additional drawing is also required in connection with mining problems.

The work in Chemistry begins with the first term of the Freshman year, and continues, without any break, for two and one-half years. Lectures and text-book study are accompanied by recitations and laboratory practice.

Metallurgy is given in two terms, and embraces the metallurgy of iron, steel, gold, silver, copper, lead, zinc, &c. Thorough courses are also given in Assaying and Blowpiping.

Particular stress is laid on a thorough course in English, which extends over the first two years. The course includes the study of Rhetoric. Both German and French are studied each term for the first two years. Two periods each week for one term are devoted to the study of Political Economy, and the same length of time is given to the study of the Constitution of the United States. A theme written on some assigned technical subject is required of the student each term.

In addition to the courses in Mineralogy and Geology, as previously explained, the mining engineers are given a course of two hours each week for one term in the study of Ore Deposits, and a course of the same length is given in Economic Geology. Instruction in the class room will be supplemented, so far as possible, by a study

of the different kinds of ore, and of the "country rock" in which they occur. A special course in the modern methods of determining rocks in thin sections by means of the polarizing microscope, with instruction in the proper methods of preparing and mounting the sections, will be offered; and practice in the ordinary methods of field work in geology, with the mapping and sectioning of a certain region, will be given.

The course in Mining proper begins with the Theory of Mine Surveying and the solution of problems for determining the position of faulted ore bodies. Then follows Prospecting for ore deposits in lodes, beds, and placers; Prospecting for magnetite with the magnetic needle, and borings for water, oil, and gas. The study of Rope, Rod, and Diamond Drill Boring is followed by that of Blasting and Excavation. In this connection the various tools, machines, and explosives are studied, together with their application in Blasting and Quarrying. Shaft Sinking, Shaft Boring, and Tunneling are studied, together with the materials for the support of excavated spaces and the methods of their application. While all the methods of Exploitation are investigated, particular attention is given to the mining of soft ore bodies, and of anthracite and bituminous coal. In the treatment of Haulage and Winding, special consideration is also given to the requirements of coal mining. Prominence is given to the study of Ventilation and Lighting because of their great importance in coal mining. The subject of Drainage receives careful treatment. Mining Law is studied with reference to locations on public lands, and also with reference to the prevention of mine accidents. The Mechanical Separation of Ores is studied, and designs

and reviews of Special Mining Operations are made. The principles involved in determining the values of Mines and Quarries are discussed.

The Mining Engineering students use a separate room as a study. This is provided with an excellent Mining Library, and is supplied with the leading Mining periodicals. By the aid of a topical index, the library is regularly used in the study of the subjects assigned. The student is in this way led to many original sources for information, and becomes acquainted with the prominent works on Mining.

Magnetite, hematite, and limonite iron mines are close at hand, and the anthracite coal mines and zinc mines are easily accessible; these, with extensive quarries of slate, limestone, steatite, granite, serpentine, and sandstone in the vicinity, offer excellent opportunities for the study of mining and quarrying operations.

The Ingersoll-Sergeant Drill Company, one of the largest manufacturers of mine machinery in the world, is located at Easton. This gives the Mining students the opportunity of seeing the construction of important mine machinery and of testing the machines.

Frequent visits are made to the mines and quarries in the vicinity, and two weeks in the spring vacation are spent at some prominent mining region in the practice of Mine Surveying and in the study of Practical Mining. Students are advised to spend one long summer vacation during their course in actual work at the mines.

Attendance at one session of the Summer School of Surveying is required of the Mining Engineering students, and attendance at the second session is strongly recommended.

SYNOPSIS.

MINING ENGINEERING COURSE.

The Freshman year the same as in Civil Engineering. (See page 74.)

SOPHOMORE YEAR.

First Term.

	HOURS.
MATHEMATICS.—Analytical Geometry and Differential Calculus (Hall)	5
DRAWING.—Descriptive Geometry	2
FRENCH AND GERMAN	4
ENGLISH.—Trench: The Study of Words	2
SURVEYING.—Lectures, Recitations, and Laboratory. Theory of Chain, Compass, and Transit Surveying; Construction, Adjustment, and Use of Instruments	2
CHEMISTRY.—Lectures and Laboratory	2
THE BIBLE.—The Acts of the Apostles, in French	1

Second Term.

MATHEMATICS.—Differential and Integral Calculus (Hall) . .	5
DRAWING.—Descriptive Geometry	3
MODERN LANGUAGES.—German, 2; French, 2	4
SURVEYING.—Drawing. Pen and Colored Topography	2
CHEMISTRY.—Lectures and Laboratory Practice	2
ENGLISH.—Rhetoric	1
THE BIBLE.—The Acts of the Apostles, in French	1

Third Term.

MATHEMATICS.—Integral Calculus (Hall), Differential Equations, and Least Squares	5
MECHANICS.—Elementary Mechanics	4
DRAWING.—Sketches and Working Drawings of Machines, with tracings and blue prints	2
SURVEYING.—Field and Office Work. Land and Mine Surveying. Computing Areas. Map of Survey	2
CHEMISTRY.—Lectures and Laboratory	1
BLOWPIPING	1
THE BIBLE.—The Acts of the Apostles, in French	1

Throughout the year.—Themes.

SUMMER SCHOOL OF SURVEYING (in vacation) . . . Three weeks.

JUNIOR YEAR.

First Term.

HOURS.

MECHANICS.—Theory and Conditions of Equilibrium, Centre of Gravity, Moment of Inertia, Solution of Problems . .	4
PHYSICS.—Heat, Magnetism, and Electricity	4
SURVEYING.—Lectures, Recitations, Field and Office Work.	
Topographical Survey and Leveling. Map of Survey .	3
MINERALOGY.—Crystallography	2
CHEMISTRY.—Quantitative Analysis	2
THE BIBLE.—New Testament Epistles, in German	1

Second Term.

APPLIED MECHANICS	4
RESISTANCE OF MATERIALS.—Elasticity and Strength of Wood, Stone, and Metals. Theory of Columns, Shafts, and Beams. Testing Laboratory	3
PHYSICS.—Acoustics. Optics	4
RAILROAD ENGINEERING	2
SPANISH (Optional)	2
CONSTITUTION OF THE UNITED STATES	2
MINERALOGY.—Descriptive Mineralogy	2
THE BIBLE	1
MINING.—Practical Work in the Mines in the Spring Vacation.	

Third Term.

RESISTANCE OF MATERIALS.—Testing Laboratory	4
STEAM ENGINEERING	4
MINERALOGY.—Determinative	3
MINE ENGINEERING	2
RAILROAD ENGINEERING	2
THE BIBLE	1
MINING.—Map of Mine Survey.	

Throughout the year.—Themes.

SENIOR YEAR.

First Term.

HYDRAULICS.—Theory of Hydrostatics. Flow of Water in Pipes, Canals, and Rivers. Weirs. Efflux of Water from Orifices and Tubes. Hydraulics. Motors	5
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	HOURS.
MECHANICAL ENGINEERING	2
METALLURGY	2
GEOLOGY	2
MINING.—Prospecting, Deep Boring, Blasting and Quarrying,	4
BIBLICAL STUDY	1

Second Term.

METALLURGY	2
GEOLOGY	2
ASSAYING	4
POLITICAL ECONOMY	2
MINING.—Shaft Sinking, Tunneling, Exploitation, Haulage, and Winding	5
BIBLICAL STUDY	1

Third Term.

FIELD GEOLOGY	2
ECONOMIC GEOLOGY.—Lectures, Recitations, and Field Work .	2
ELECTRICAL ENGINEERING.—Electric Lighting and Electric Mine Machinery	2
MINING.—Ventilation, Drainage, Mechanical Separation of Ores. Designs for and Reviews of Special Mining Op- erations	9
BIBLICAL STUDY	1
GRADUATION THESIS.	

COURSE IN ELECTRICAL ENGINEERING.

Professor Moore and Mr. Nesbitt.

This course was organized in response to an earnest demand from students who sought opportunities of study in this department of science. It is parallel to the other technical courses, and differs from them in substituting the study of Physics, especially Magnetism and Electricity, for the strictly professional portions of the other courses.

The Sophomore year is the same as that of the civil engineers, except that two periods per week are given to work in the Physical Laboratory, amounting to six hours' actual laboratory work. In the Junior and Senior years about one-half of the time of the students is given to special work in electricity and kindred subjects.

Graduates in the Department of Electrical Engineering receive the Degree of Electrical Engineer.

The laboratories are large and well arranged.

The *General Laboratory of Physics* is thirty by sixty feet in dimensions, well lighted and convenient. The ceiling is high, and ample wall space is provided for permanent pieces of apparatus. Gas, electricity, compressed air, etc., are close at hand.

The main *Electrical Laboratory* is also thirty by sixty feet in dimensions. This room is fitted up with all the appliances required in such a laboratory. The dynamo collection consists of representative types of continuous and alternating current generators and motors, lamp banks, water rheostats, brakes, etc.; and the necessary instruments are supplied for loading and testing motors and generators.

A transformer collection to show the representative American types is being made.

The laboratory is supplied from the Edison Illuminating Company's station with continuous currents at one hundred and ten and two hundred and twenty volts, and with alternating current at sixty frequency. Other pressures can be obtained from generators in the laboratory; and alternating and polyphase currents of other frequencies can be generated at will by means of alternators

and rotary converters. Galvanometers of all kinds, batteries, commercial testing instruments, etc., are in constant use.

The *Testing Laboratory* is twenty-five feet long by twenty-one feet wide. It contains the necessary delicate instruments for testing, among which are a Thomson Quadrant Electrometer, a Thomson Reflecting Astatic Galvanometer, Tripod Galvanometers, Resistance Boxes, Ballistic Galvanometers, Condensers, etc.

The *Photometric Laboratory* or *Dark Room* is twenty-three feet square. It is papered with dead black paper, is high and well ventilated. It contains apparatus for the determination of the illuminating power of various illuminants. It is well supplied with gas meters, wet and dry, and with apparatus for making measurements of the illuminating power of electric lamps. Photographic apparatus, for scientific purposes, is used in this laboratory.

The *Spectroscopic Laboratory* is twenty-five feet long by twenty-one feet wide. It contains spectroscopes of the best makers. This room is also used as the Microscopic Laboratory. The Department is well supplied with microscopes.

The *Shop* contains a seven horse power Otto gas engine, besides a fifteen and a twenty horse power electric motor. There are lathes, emery wheels, and the other usual appliances of a repair shop.

The *Apparatus Room* is stocked with the latest and best instruments.

The *Lecture Room* is large, well lighted, and supplied with all the conveniences for table experiments. Steam, compressed air, gas, electricity, and sunlight are very carefully arranged for.

In addition to the dynamos and motors owned by the College, the students have access to the Edison and municipal plants and to the finely equipped electric railways of the city.

The *Physical and Electrical Library* is well stocked with the standard works on electrical and other subjects, and is kept up to the times by the constant addition of foreign and home periodicals. The latest advances in physical science are announced to the classes, and reports, written and oral, are made by the students upon them. The Library, in connection with the Laboratory, is regarded as an exceedingly important instrument of instruction.

The studies of the Freshman year are the same as in the Civil Engineering Course. (See page 74.)

SOPHOMORE YEAR.

First Term.

	HOURS.
MATHEMATICS.—Analytical Geometry and Differential Calculus	5
DESCRIPTIVE GEOMETRY	2
MODERN LANGUAGES.—French	2
German	2
English (Trench on The Study of Words)	2
PHYSICS.—Laboratory. Method of Physical Measurements (Moore)	2
CHEMISTRY	2
THE BIBLE	1

Second Term.

MATHEMATICS.—Differential and Integral Calculus (Hall) . .	5
DESCRIPTIVE GEOMETRY	3
MODERN LANGUAGES.—French, 2; German, 2; Rhetoric, 1 . .	5
PHYSICS.—Laboratory. Statics. Hydrostatics	2
CHEMISTRY.—Laboratory	2
THE BIBLE	1

Third Term.

	HOURS.
MECHANICS.—Elements of Mechanics (Moore)	4
MATHEMATICS.—Integral Calculus (Hall), Differential Equations, and Least Squares	5
DRAWING	2
CHEMISTRY	2
PHYSICS.—Laboratory. Heat	2
THE BIBLE	1

JUNIOR YEAR.

First Term.

PHYSICS.—Heat, Electricity. Lectures and Recitations . . .	4
PHYSICAL LABORATORY.—Electricity	2
ELEMENTS OF MECHANISM	2
APPLIED MECHANICS	4
DRAWING.—Descriptive Geometry	4
MINERALOGY	2
THE BIBLE	1

Second Term.

APPLIED MECHANICS	4
RESISTANCE OF MATERIALS	3
PHYSICS.—Acoustics. Optics. Lectures and Recitations . .	4
ELECTRICAL ENGINEERING	2
PHYSICAL LABORATORY.—Electrical Measurements	2
UNITED STATES CONSTITUTION	2
THE BIBLE	1

Third Term.

ELECTRICAL ENGINEERING.—Dynamo Electric Machinery . .	2
Laboratory	2
RESISTANCE OF MATERIALS	3
STEAM ENGINE	4
MINERALOGY	3
THE BIBLE	1
THEMES.	

SENIOR YEAR.

First Term.

ELECTRICAL ENGINEERING.—Dynamo Electric Machinery . .	6
Laboratory. Electrical Testing	2

	HOURS.
HYDRAULICS	5
DRAWING.—Machine Designing and Drawing	2
THE BIBLE	1

Second Term.

ELECTRICAL ENGINEERING.—Alternating Currents	6
Electric Transmission	3
The Electric Telegraph	1
Laboratory	3
POLITICAL ECONOMY	2
THE BIBLE	1

Third Term.

ELECTRICAL ENGINEERING.—Alternating Current Machinery	6
The Electric Railroad	3
The Telephone	2
Laboratory—Electrical Testing	2
Designs for and Reviews of Electrical Engineering Works.	
HISTORY	2
THE BIBLE	1
THESIS.	

Each term throughout the course—Elocution.

NOTE.—Laboratory work, as herein stated in "hours," represents three hours of actual work, the "hour" indicating a "period" of that length.

COURSE IN CHEMISTRY.

Professor Hart, Mr. Shimer, and Mr. Meade.

The aim of this course is to fit young men for practical work in chemistry, either as chemists in iron and steel works, in manufacturing establishments, or as chemical manufacturers. Great attention is paid to Analytical Chemistry, and especially to the chemistry and metallurgy of iron and steel. Graduates are fitted to take paid posi-

tions as chemists immediately upon graduation. For men of the proper character immediate and remunerative employment can be secured.

This course will also be found an excellent preparation for the study of Medicine.

While the instruction centres in the two branches of

CHEMISTRY AND METALLURGY,

the course aims to supply a thorough education along the lines most necessary for a successful career as a responsible chemist. The same instruction in the Bible, in Mathematics, Physics, the Natural Sciences, English, French, and German, which is required in the ENGINEERING COURSES, is required here, as will be seen in the synopsis. The study begins with a course of lectures on General Chemistry combined with the study of a text-book. In connection with these lectures each student is required to work in the Laboratory. Following the course in General Chemistry comes a thorough drill in Qualitative Analysis in connection with frequent recitations. The beginner is encouraged to work out and use methods of separation not laid down in the book. A thorough drill in chemical arithmetic forms part of this course.

During the Freshman year a course in Organic Chemistry is given, followed by a course in Theoretical Chemistry and a review of the Organic Chemistry. Instruction in these subjects is given by means of lectures, recitations, and laboratory work in the preparation of selected compounds.

Thorough courses are also given in Volumetric Analysis, Assaying, Metallurgy, and Technology. There are

optional courses during Junior year in Blowing and Grinding Glass, and in the reading of German in Scientific Text.

During Senior year the student is required to carry on an investigation upon some chemical subject, and to write a thesis giving the results of his work. He is thus thrown entirely upon his own resources, and the training secured is invaluable as a preparation for work after leaving college.

In Quantitative Analysis accuracy is insisted on as the first requisite, and slovenly work is discouraged in every possible way. The following substances are analyzed:—

IRON in Iron Wire.

LIMESTONE (Silica, Iron, Alumina and Phosphoric Acid, Lime, Magnesia, Carbon Dioxide).

LIMONITE.—Complete Analysis.

BLAST-FURNACE CINDER.—Silica.

COAL.—Moisture, Volatile, Coke, Ash, Sulphur, Phosphorus.

PIG IRON.—Silicon, Phosphorus, Carbon (combined and graphitic), Sulphur.

SPIEGELEISEN.—Manganese.

TITANIFEROUS IRON ORE.—Titanic Acid.

COPPER ORE.—Copper by Battery.

ZINC ORE.—Zinc, Manganese.

COMMERCIAL FERTILIZERS.—Potash, Nitrogen, Phosphoric Acid, soluble, insoluble, and total.

WATER ANALYSIS.—Total Solids, Chlorine, Sulphates, Free and Albuminoid Ammonia, Nitrates and Nitrites.

GAS ANALYSIS.—Carbon Monoxide and Dioxide, Hydrogen, and Methane.

MINERAL OIL in Lubricating Oil, Fire and Flash Tests, Gravity and Viscosity.

ANTHRACENE in heavy Tar Oil.

ELEMENTARY ORGANIC ANALYSIS.

Students who are looking forward to the study of Medicine after graduation are allowed to substitute work in Toxicology for a part of the work laid down above.

Partial or special students may enter the laboratories at any time, provided they have the necessary knowledge of General Chemistry to work advantageously. Advanced students will be afforded opportunity for continuing their studies, or for conducting investigations in Organic or Inorganic Chemistry.

The Chemical Library (comprising nearly one thousand volumes) is placed in a separate room in the laboratory building, and is accessible to the students at all hours.

In addition, the students have access to Professor Hart's private chemical library, embracing about one thousand volumes. These libraries contain full sets of the *American Journal of Science*, *Dingler's Polytechnisches Journal*, *Wagner's Jahresbericht*, *Journal of the Society of Chemical Industry*, *Fresenius Zeitschrift*, *American Chemical Journal*, *The Journal of The American Chemical Society*, *Zeitschrift für Angewandte Chemie*, *Zeitschrift für Anorganische Chemie*, *Zeitschrift für Physikalische Chemie*, and nearly complete sets of *Liebig's Annalen*, *Annales de Chimie*, *Berichte der Deutschen Chemischen Gesellschaft*, and partial sets of the *Comptes Rendus*, *Bulletin de la Société Chimique*, *Journal für Praktische Chemie*, *Chemical News*, *Journal of the Chemical Society*, *Chemisches Centralblatt*, and many dictionaries and special works upon Chemistry.

SYNOPSIS. CHEMICAL COURSE.

FRESHMAN YEAR.

First Term.

	HOURS.
MATHEMATICS.—Algebra	4
CHEMISTRY.—Lectures and Recitations (Hart)	4
MODERN LANGUAGES.—German Grammar and Translations	2
English	2
DRAWING.—Elements of Industrial Drawing; Plane Problems,	2
HYGIENE.—Lectures	1
THE BIBLE.—Old Testament	1

Second Term.

MATHEMATICS.—Plane Trigonometry	5
CHEMISTRY.—Lecture and Laboratory Practice	2
MODERN LANGUAGES.—German (2), French (2), English (2),	6
DRAWING.—Projections	2
THE BIBLE.—Old Testament	1

Third Term.

MATHEMATICS.—Spherical Trigonometry (Wentworth); Men- suration (Hall), Plane Analytic Geometry	5
CHEMISTRY	2
MODERN LANGUAGES.—French (2), German (2), English (2)	6
DRAWING.—Projections. Model Drawing. Plotting Surveys	2
THE BIBLE.—New Testament	1

Throughout the year—Themes and written Translations into English from French and German.

SOPHOMORE YEAR.

First Term.

MATHEMATICS.—Analytic Geometry; Differential Calculus (Hall)	5
DESCRIPTIVE GEOMETRY	2
CHEMISTRY	4
MODERN LANGUAGES.—French (2), German (2)	4
English (Trench)	2
THE BIBLE.—The Acts, in French	1

Second Term.

	HOURS.
MATHEMATICS.—Differential and Integral Calculus (Hall) . .	5
ANALYTICAL CHEMISTRY	2
CHEMICAL LABORATORY	2
MODERN LANGUAGES.—German (2), French (2)	4
English, Rhetoric	1
THE BIBLE.—The Acts	1

Third Term.

MECHANICS.—Elements of Mechanics (Moore)	4
ANALYTICAL CHEMISTRY.—Laboratory	9
BLOWPIPING	1
BOTANY.—Field work (6 hours per week)	2
THE BIBLE.—The Acts	1
<i>Throughout the year—Declamations and Themes.</i>	

JUNIOR YEAR.

PHYSICS.—Heat, Electricity, Magnetism, Optics, and Acoustics. (First two terms)	4
CHEMISTRY.—Theoretical and Practical, including Qualitative and Quantitative Analysis, and Laboratory work in Or- ganic Chemistry, and in Assaying. (8 hours first and second terms; 12 hours third term)	8-12
GEOLOGY.—General and Economic. (Third term)	4
THE BIBLE.—New Testament Epistles, in German	1
<i>Throughout the year—Declamations and Themes.</i>	

SENIOR YEAR.

CHEMISTRY.—Advanced work in all departments of Chemis- try, Metallurgy, Chemical Technology, with special work in some selected department. (14 hours first term; 12 hours second term; 14 hours third term)	12-14
POLITICAL ECONOMY.—General Principles. (Second term) . .	2
HISTORY.—Lectures on the development of European institu- tions. (Third term)	2
THE BIBLE.—History and Evidences	1
<i>Throughout the year—Themes and Extemporaneous Speaking.</i>	
Practice in the preparation of Chemical theses.	

GENERAL INFORMATION.

ATTENDANCE.

Attendance on all College exercises is strictly required. Absences on account of sickness, or for other satisfactory cause, may be excused, and leave of absence will be granted at the request of parents when absolutely necessary. In such cases the absence is excused, but the student is invariably required to make up such work as he may lose by reason of his absence. Reports are sent to parents whenever the absences of their sons exceed a reasonable number. In case of the absences becoming excessive, the Faculty will punish the neglect with suspension. Absences incurred at the beginning and end of terms, especially if they involve absence from examinations, and immediately preceding and succeeding holidays, are regarded with especial disapproval and under ordinary circumstances will not be excused.

Each student is expected to have sixteen recitations each week. Three hours of field or laboratory work are regarded as equivalent to one recitation period. The regular gymnasium drills are also regarded as required exercises so far as prescribed. No student is permitted to take a course involving fewer hours of recitation without a special vote of the Faculty.

EXAMINATIONS.

Examinations are held at the close of each term on the studies of that term, and may be either written or oral, or both, at the option of the professor in charge. In addition to these regular examinations, partial examina-

tions and written recitations are held from time to time during the term, with or without notice to the students. Failure to attend an examination, except for reasons of absolute necessity, is regarded as a serious delinquency, and will be dealt with according to the circumstances of each case.

STANDING.

The scholarship of students is determined by the results of the examinations and daily recitations combined.

Students entering with conditions are required to make them up before the end of the term next after that in which they enter.

Students failing to pass in any studies of any term are required to make up such studies before the end of the next term, and they may be specially directed to do so at an earlier date. Students who do not comply with these regulations will be put on probation in scholarship, or lose standing and be only "permitted to recite," or be dropped into the next lower class, as the Faculty may, in each case, decide.

Reports of the standing of the students are made to their parents or guardians at the end of each term.

GRADUATION.

Students who have pursued the entire course as prescribed and have successfully passed their examinations are recommended to the Trustees for the first academic degree in course. Such recommendations are ordinarily acted upon and the degrees are conferred at Commence-

ment, at which time the students receive diplomas from the President of the College. At Commencement the Faculty award such honors as it sees fit to those who are to receive degrees. These honors ordinarily consist of a valedictory oration, a Latin salutatory, and other honorary orations and theses.

COMMENCEMENT.

The third Wednesday in June and the three days immediately preceding it are set apart for the exercises in connection with the annual Commencement. On Sunday, the first of these days, a Baccalaureate sermon is preached in the College Chapel at eleven o'clock in the morning; and in the evening a sermon is preached in the auditorium of Pardee Hall before the Brainerd Society of the College by some distinguished minister selected by the Society.

The preacher for 1901 was Rt. Rev. Ethelbert Talbot, D. D., Bishop of Central Pennsylvania. The preacher for 1902 is Rev. James I. Good, D. D., '72, of Reading, Pa.

On Monday the Senior Class holds its Class Day exercises on the campus. On Class Day, 1901, the Class of 1901 gave the College as a parting gift a mural tablet in memory of Rev. Thomas Conrad Porter, D. D., LL. D., which was placed in the College Chapel.

The Alumni and Literary Societies hold their reunions on Tuesday, and orations are delivered before the respective societies in the Society Halls. The annual address before the Alumni was delivered by James W. King, Esq., of Philadelphia.

The regular Commencement exercises are held in the auditorium of Pardee Hall on Wednesday morning, the afternoon being occupied by the Alumni dinner. All these exercises are open to the public, who are cordially urged to be present. Various other exercises of an athletic or social nature are conducted on the part of the students under a general supervision by the Faculty.

DEGREES.

THE FIRST DEGREE.—The degree of *Bachelor of Arts* is conferred on the graduates of the Classical Course; *Bachelor of Philosophy*, on those of the Latin Scientific Course; *Bachelor of Science*, on those of the General Scientific Course; *Bachelor of Science* (in Chemistry), on those of the Chemical Course; *Civil Engineer*, on those of the Civil Engineering Course; *Engineer of Mines*, on those of the Mining Engineering Course; *Electrical Engineer*, on those of the Electrical Engineering Course.

MASTER'S DEGREE.

MASTER OF ARTS.—The degree of *Master of Arts* may be conferred one year after graduation on any *Bachelor of Arts* who has pursued a prescribed course of study, equivalent to sixteen recitations per week during one year in residence, passed the examinations, and presented a satisfactory thesis.

The same degree may be conferred two years after graduation on any *Bachelor of Arts* who shall have devoted at least one year exclusively to advanced study under the direction of the Faculty, passed examinations in the studies pursued, and presented a satisfactory thesis.

Candidates for this degree must in all cases register on or before October 1st, and examinations must be held at the College at least once in each College term. Theses must be presented for approval not later than May 1st. A registration fee of \$5 and tuition fee of \$100 per annum for residents, and \$45 per annum for non-residents, is exacted of all graduate students.

MASTER OF SCIENCE.—The degree of *Master of Science* may be conferred upon any graduate of the Scientific Department upon conditions similar to those prescribed for the degree of Master of Arts.

These rules shall not prevent those who have graduated from the College prior to July 1st, 1900, from receiving the Master's degree upon application, setting forth that they have spent at least three years in, and successfully completed, a course of study in Law, Medicine, or Theology, or spent three years with success in teaching or in professional scientific employment.

DOCTOR OF PHILOSOPHY AND OF LETTERS.

The degree of *Doctor of Philosophy* may be conferred three years after graduation on any college graduate who, during three years of continuous residence at the College, shall have devoted himself exclusively to advanced studies under the direction of the Faculty, passed examinations in them, and presented a satisfactory thesis. The candidate must designate three branches of study which he desires to pursue, each in a different department, one major or principal study, and two minor studies.

The regulations governing registration, examination, theses, and fees are the same as for the Master's degree.

Any graduate of a recognized college may be permitted to pursue graduate studies under the direction of the professors in the various departments upon satisfactory evidence of his fitness to do so. No curriculum is prescribed for such students. A course of study is usually arranged after consultation which will meet the specific object each student has in view.

CERTIFICATES.

Students who have been admitted to any department of the College, and have passed satisfactory examinations therein, may obtain certificates of the work which they have done if they have been in attendance not less than one year.

RELIGIOUS INSTRUCTION.

The aim of Lafayette College is distinctly religious. Under the general direction of the Synod of Pennsylvania of the Presbyterian Church its instruction is in full sympathy with the doctrines of that body. At the same time religious instruction is carried on with a view to a broad and general development of Christian manhood within the lines of general acceptance among evangelical Christians, the points of agreement, rather than those of disagreement, being dwelt upon.

Prayers are held each morning in the Chapel at 7.50 and religious services in the Chapel Sunday mornings at 11 o'clock. All students are expected to attend these services. No exceptions will be made to this rule for morning prayers. Where there is some exceptional reason assigned by the parents, students will be permitted to attend one of the churches in Easton instead of the Sunday morning service. This permission will only be granted on request of parents and for sufficient reason.

Special sermons are preached before the College from time to time by distinguished ministers. The preachers for 1901 were Rev. Henry Collin Minton, D. D., of San Francisco, Cal., Moderator of the Presbyterian General Assembly; Rev. Jesse C. Bruce, D. D., of Allegheny; Rev. J. D. Hart Bruen, of Belvidere, N. J.; Rev. David deF. Burrell, of Germantown; Rev. John Calhoun, of Mt. Airy; Rev. Joseph W. Cochran, of Philadelphia; Rev. Joseph Dixon, of Beemerville, N. J.; Rev. John N. Foreman, of India; S. Hopkins Hadley,

of New York; Rev. Frank D. P. Hickman, of Africa; Hon. H. M. Hinckley, of Danville; Rev. J. Hood Laughlin, of China; Rev. Charles Lee, of Carbondale; Rev. James A. McWilliams, Ossining, N. Y.; Rev. Rufus W. Miller, '83, Reading; Mr. William J. Miller, Jr.; Rev. Francis Palmer, of Columbus, Ohio; Rev. John F. Patterson, D. D., of Orange, N. J.; Rev. Virgil E. Rohrer, of Philadelphia; Commander A. V. Wadhams, United States Navy; Arthur V. Williams, Jr., of New York; Rev. David G. Wylie, D. D., of New York, and a number of neighboring clergymen.

The preacher for the Day of Prayer for Colleges, 1902, is Rev. James I. Vance, D. D., of Newark, N. J.

Instruction in the Bible has always held a prominent place in the College, and a full account of the courses in Bible study will be found on page 17.

LECTURES.

Special courses of lectures are given annually in connection with several departments and will be found under those departments. A more general course of a popular character is given each year.

Among those who have given lectures during the year 1901 are Prof. F. W. Clarke, of the United States Geological Survey; Prof. J. Taylor Hamilton, D. D., of Bethlehem; Robarts Harper; B. F. Lacy, Ph. D., Philadelphia; Prof. John S. Mackey, of New York; Justice James T. Mitchell, LL. D., of Philadelphia, Supreme Court of Pennsylvania; Frederick J. Pope, of New York; Ernest Seton-Thompson, of Connecticut; Com-

mander Albion V. Wadhams, United States Navy; President Warfield, and our Professors Davison, Ferrier, Folwell, Hall, Hart, Moore, Owen, Peek. and Porter.

TERMS AND VACATIONS.

The College year is divided into three terms, with intervening vacations, as given in the Calendar on page 5. All the classes are examined at the close of each term, and a report sent to the parent or guardian. Students are required to be present punctually at the beginning of each term, and are not allowed during term-time to be absent from town, except by written permission from the President.

The Wednesday after the 20th of October in each year is observed as Founders' Day, in memory of those who founded the College and of those who have since contributed to its usefulness. On Founders' Day, 1901, an address was delivered by Rev. John Taylor Hamilton, D. D., Professor in the Moravian Theological Seminary, Bethlehem, on "The Early Moravian Contributions to Liberal Education."

BUILDINGS. LABORATORIES. LIBRARIES.

The College grounds are situated upon the summit of a beautiful hill, overlooking the city of Easton. They are reached by a flight of stone steps, which ascend the bold front of the hill directly from the head of Third Street, or by electric cars, which skirt the face of the hill by a gradual incline. At the head of the steps stands the monument erected by the Alumni Association to their comrades who "died for the Union." The grounds

contain about forty acres, terraced and laid out under the direction of Donald G. Mitchell. The buildings upon the campus are thirty in number. The oldest of these is

SOUTH COLLEGE.

The central portion of this structure is the original College building, erected in 1833. It contains a number of lecture-rooms, "Brainerd Hall," the home of the Christian Association of the College, and a number of dormitory rooms. Two wings have been added to the original building, which contains the College Chapel and lecture-rooms for the English, Latin, and Greek Departments and the laboratory of the Biological Department. A new pipe organ, the gift of the Class of 1874, and an electric chandelier, the gift of the Class of 1900, were placed in the College Chapel in 1900.

THE VAN WICKLE MEMORIAL LIBRARY.

The Van Wickle Library was dedicated on May 30th, 1900. It has given to the College one of the most needed additions to its equipment. A beautiful building of Pompeian brick and terra cotta, thoroughly furnished with the most approved appliances for library work, it is at once a most beautiful and useful feature in the College's development. It contains a large reading room, in which the periodicals and books of most constant reference are to be found; a reference book department; a large room for the general storage of the Library; Librarian's room, and small rooms for special work. Mrs. Van Wickle has placed in the reading room a memorial window, executed by Tiffany & Co., representing Sir Philip Sidney at the Siege of Zutphen.

PARDEE HALL.

The most commanding position on the campus is occupied by this building, the most conspicuous evidence of the liberality of the late Ario Pardee, which reached to every department of the College. Here the departments of Civil, Mining, and Electrical Engineering are supplied with thoroughly-equipped laboratories and lecture-rooms, and the museums of these departments, and of General Geology, Mineralogy, and Natural History, are to be found. The Ward Library and the handsome rooms of the two Literary Societies are also in this building, and the central portion of the second and third floors of the main building contains a beautiful auditorium, in which the Commencement exercises, lectures, and other public entertainments are held.

THE JENKS CHEMICAL LABORATORY

Contains the chemical laboratories and lecture-rooms, and is used both for the students generally, and especially for those pursuing the Chemical Course. The equipment is thorough and complete. This building will be altered and equipped for the Biological Department as soon as the Gayley Laboratory is finished.

THE GAYLEY LABORATORY OF CHEMISTRY AND
METALLURGY.

At the Commencement exercises of 1900, Mr. James Gayley, '76, of the Board of Trustees, announced his willingness to erect a laboratory for the departments of Chemistry and Metallurgy, and presented plans for such a building. The gift was immediately accepted, and the plans, which were prepared by Charles W. Bolton, of the Class of '80, approved. The building consists of three

stories, built of Indiana stone, Colonial brick, and gray terra cotta, and gives a thoroughly modern equipment to these departments. Mr. Henry W. Oliver, Messrs. Baker & Adamson, and Prof. Edward Hart have made generous gifts to its furnishing.

THE ASTRONOMICAL OBSERVATORY,

In addition to the observatory proper, contains a lecture-room, with accommodations for the students in Astronomy.

WEST COLLEGE

Contains the lecture-room of Dr. Francis A. March and the offices of the Registrar and Treasurer of the College.

THE GYMNASIUM,

which has already been sufficiently described on page 19, contains a complete equipment for physical training.

THE DORMITORIES.

A complete reorganization of the dormitory system was effected in the summer of 1900 by the building of central structures, known as Knox and Fayerweather Halls, to connect Blair and Newkirk Halls and Martien and Powell Halls respectively, and the facing of the completed buildings with mottled Pompeian brick, handsomely trimmed with red terra cotta. The architectural beauty of the buildings is in marked contrast with the former appearance of the separate buildings. These halls are connected with McKeen Hall in a common steam plant. A complete sanitary plumbing system of baths, sinks, closets, and electric lights have been installed in all the buildings. These improvements leave nothing to be desired for the health and comfort of the students.

INFIRMARY.

A building on the extreme northeast corner of the campus, facing upon McCartney Street, is set apart for the use of sick students, thus securing quiet and complete isolation in case of the occurrence of any contagious disease.

BRAINERD HALL.

A building for the Y. M. C. A., the gift of J. Renwick Hogg, Esq., '78, of the Board of Trustees, is now being built. It is a three-story gray stone building in the Tudor Gothic style. It will contain a large room for the meetings of the society, and reading, writing, and committee rooms. It will also have a trophy room for the Athletic Association, and bowling alleys in the basement.

Its object is to afford a home under active Christian influences for all forms of student life.

The remaining buildings consist of a large GREENHOUSE, a useful adjunct to the department of Botany, and also supplying flowers and plants for the adornment of the grounds in summer and of the buildings in winter; and of the HOMES OF THE MEMBERS OF THE FACULTY. The intimate relations resulting from the residence of both Faculty and students upon the college grounds is regarded as one of the most wholesome features of the college life.

LIBRARIES AND READING-ROOM.

The College has two libraries, the regular College Library, which occupies the Van Wickle Memorial Library, described above, and the Ward Library in Pardee Hall. The College Library was established at the foundation of the College, and has had a steady and uninterrupted growth since 1832, and is chiefly made up of books

bearing directly on the courses of instruction. The Ward Library, the gift of the heirs of C. L. Ward, Esq., of Towanda, is largely made up of books of general literature and history and Political Science. Each of the Technical Departments has also a collection of books, magazines, and other scientific publications in rooms in immediate connection with their lecture rooms and laboratories. By the gift of \$5000 Mr. Henry W. Oliver laid the foundation of the H. W. Oliver Chemical Library in the new Gayley Laboratory. The foundation has been added to by gifts from Prof. Edward Hart and the incorporation of the College's collection of chemical works. The Literary Societies, also, have libraries numbering about 6000 volumes, largely of a literary character, which valuably supplement the more solid libraries of the College.

The College Library contains a papyrus scroll, five feet long, from a mummy at Thebes, with a hieratic inscription—pronounced by Seyffarth the finest he has seen—presented by the late Hon. John W. Garrett, of Baltimore, of the Class of '37.

There is also a full-length portrait of Lafayette, painted by Healey at the Chateau LaGrange, from Ary Sheffer's famous painting, and presented by the late Dr. Thomas W. Evans, of Paris.

The LIBRARIES have received gifts, which are hereby gratefully acknowledged, from the following individuals and institutions :—

Bradbury Bedell, thirty-nine volumes of *The Art Journal*; the family of ex-President Cattell, fifty-six volumes and literary collections; Rev. E. C. Cline, Class of '57, twenty-three volumes; J. Renwick Hogg, Class of '78, two hundred and nine volumes;

Mrs. Elizabeth Holmes, forty-three volumes; James W. Long, Class of '36, ten volumes; Lewis Burd Walker, '75, a set of "Dresden Gallery of Engravings;" and also gifts from Boston Public Library; Rev. David H. Campbell, D. D., '72; Mrs. Jonas Gilman Clark; Prof. S. J. Coffin, '58; Eastern State Penitentiary; Rev. W. L. Evans, M. A.; M. A. Filson, '98; Rev. W. H. Filson, '68; Prof. A. Prescott Folwell; Edward J. Fox, Esq., '78; Free Library of Philadelphia; James W. Green, Esq.; Rev. William H. Hodge; John W. Jordan; Charles H. Lerch, '82; Library of Congress; Peabody Institute Library; Peace Association of Friends; Pennsylvania Society of New York; Isaac Roberts, F. R. S.; Edwin Jaquett Sellers; Shakespeare Society of Philadelphia; Albert K. Smiley; Smith College; Miss Eliza Coles Tappan; Theta Delta Chi Fraternity; United States Government; University of Pennsylvania; University of the State of New York; Louis F. Wilzin, '05.

SCIENTIFIC COLLECTIONS.

These are extensive and valuable, and are rapidly increasing from year to year by gifts from societies and individual donors, and by special appropriations in addition to the fees for registration and matriculation.

Among the most valuable of the collections may be mentioned the extensive Herbarium, collected by Prof. Thos. C. Porter during forty years of enthusiastic labor; it is specially rich in North American plants, and is believed to contain the most complete Flora of Pennsylvania in existence; the series of Ward's celebrated casts, illustrating Geology and Palæontology, together with the specimens purchased for the College by Prof. Hitchcock in Europe.

The apparatus in the Department of Physics and Applied Mechanics, the instruments used in the Departments of Astronomy and Engineering, and the scientific equipment of the numerous and extensive laboratories, fairly meet the demands of advanced instruction in these departments; a special feature, however, is the series of nine hundred Wall Charts, executed at the College by Gustave Garnier, under the direction of the Professors in the Departments of Astronomy, Chemistry, Physics and Applied Mechanics, Metallurgy, and Natural History. There are valuable models in Machine Drawing, Stone Cutting, Crystallography, and Architecture.

COLLEGE SOCIETIES.

LITERARY SOCIETIES.

The *Washington* and *Franklin* Societies were organized early in the history of the College and are conducted by the undergraduates. Both Societies have well-furnished apartments in Pardee Hall, and valuable libraries. They meet every Wednesday evening for literary exercises, consisting of orations, essays, and debates. A generous rivalry for College honors exists between them, and each year representatives of the two societies from the Junior Class engage in a public contest in oratory. On the day before Commencement the societies hold reunion meetings in their halls. These societies are an important part of College life and work, and *all the students are strongly advised to join them.*

BRainerd EVANGELICAL SOCIETY.

The *Brainerd Evangelical Society*, as a society of inquiry, meets each Thursday evening and on the first Friday of each month in the interest of missions, and for the promotion of Christian effort. Its public anniversary is held on Sabbath evening of Commencement week, at which time a sermon is preached usually by some former member of the Society. In 1902 the preacher selected is Rev. James I. Good, D. D., '72, of the Reformed Church, Reading, Pa.

The Society looks forward with great satisfaction to the early completion of the building now being built for its use by Mr. J. Renwick Hogg, '78. This building should mark an era of increased usefulness in the history of Y. M. C. A. work in the College.

BIOLOGICAL SOCIETY.

The *Biological Society* is for the purpose of making its members intelligent concerning the important biological questions of the day, and enabling them to appreciate the value of research in nature. The membership consists of those students of the three upper classes who are either prospective or present members of the classes in Biology, and of such graduate students as are interested in the laws of life comprehended through the Natural History Sciences.

It meets the second Monday night of each month, when a lecture is given or a paper read by one of the members or any learned person whom the Society may invite. The following subjects have been discussed recently in the meetings: Physiology of the Blood, the X-rays in Medicine, Pasteur's Contribution to Biology, Hypnotism in Science, Recent Advances in Biology, Habitat of Bacteria, and Telegony or Distant Heredity.

SCIENTIFIC SOCIETY.

The *Scientific Society* has for its object the preparation and discussion of papers on engineering, chemical, or allied subjects. Laboratory students have the opportunity of working on original investigations, and communicating the results to the society.

EXPENSES.

The tuition is \$100 per annum in all departments. Sons of ministers of the Presbyterian Church and candidates for its ministry receive free tuition in the Classical Course, and are charged one-half tuition in the Technical courses.

The other College charges are as follows :—

General Expenses	\$8 00	a term.
Library and Reading-room	2 00	“
Gymnasium	2 00	“

The annual College charges are, therefore, for those who pay tuition in full, \$136.

Entrance Fees.—Each student pays \$5 when he is registered for examination on entering College, and \$10 when he is matriculated, thirty days afterward. These fees are appropriated to the Library Fund and to the increase of the scientific collections and apparatus. No fees are charged for diplomas.

Laboratories.—Apparatus for the use of students in the Chemical Laboratories will be furnished and charged in their account, and the charge canceled for that returned in good condition. Chemicals and all other materials will be charged according to the average cost. A deposit sufficient to meet these expenses is made on entering the Laboratories. Members of the Classical Department are admitted to all the privileges of the Laboratories while studying General Chemistry, and, for the present, without charge for the aid of the professor in attendance; each student will, however, pay for chemicals which he uses, and for any apparatus which he may break or injure. In the Physical Laboratory a fixed charge of \$5 per term is made for supplies and the use of apparatus.

Scholarships.—For the present the scholarships securing free tuition in the Classical Course will hold good for the Pardee Scientific Department, unless the student shall select Technical Studies, in which case he must pay each term one-half of the regular fee for tuition.

Aid is also given to young men of ability and good moral character who are dependent on their own efforts for their education. The amount will depend on the necessities of the applicant, but in no case will exceed the amount of the tuition fees in the Classical and Latin Scientific Courses, or one-half the tuition fees in the Technical Courses. Application for such aid should be made to the President.

BOARD, ROOMS, WASHING.

In all cases the place of boarding must be approved by the Faculty. The price of table board in clubs managed by the students at present averages about \$3 per week. Board, including furnished room, in private families, is from \$4.50 to \$6 per week. Washing costs 40 cents per dozen pieces.

Unfurnished rooms in the College buildings rent for \$5 to \$30 a term (average \$15.88); unfurnished rooms adjacent to the College premises for \$12 to \$16 a term, or furnished rooms for \$15 to \$30 a term.

Students are expected to room in the College dormitories unless they receive permission to room elsewhere. If they do not occupy College rooms, they are subject to an assessment to meet the loss to the College for rooms left vacant. The reason for this rule is that the funds of the College have been invested in the dormitories in order to secure cheap and convenient lodgings for the students, and it is to the advantage of all that the buildings should be occupied, the income from the investment being essential to the work of the College, and the students being protected against exorbitant rents.

Information in regard to the selection of rooms can be had from Professor Moore, Inspector of College buildings, the buildings being open for inspection during each term, and three days preceding the first day of each term. Rooms are assigned only to students who have been admitted to College, or who present full certificates from authorized schools, in the order of their application.

The College charges must be paid each term in advance, also the room rent when the student occupies a room in the College buildings.

The care and regulation of the dormitories are under the direction and management of a Board of House Representatives, elected by the students. House rules are enacted and enforced by the Board. The Parietal Committee, composed of the Inspector of Buildings and Officers of Instruction who reside in the dormitories, acts as a court of appeal.

Board of House Representatives.—S. T. McCormick, Jr., President, 137 Fayerweather Hall; F. M. Painter, Secretary, 151 Powell Hall; Morris G. Readinger, 167 East Hall; Jacob M. Schick, 46 South College; Thomas Morgan, 68 Blair Hall; William J. Welsh, Jr., 76 Knox Hall; Herman S. Ficke, 82 Newkirk Hall; David D. Cure, 92 McKeen Hall; William J. Williams, 132 Martien Hall.

Fuel Deposit.—The Treasurer also, on behalf of the Committee of Students, collects with the College bills at the beginning of the first term \$7, and of the second term \$5, for fuel. The unexpended balance is refunded by the Committee at the close of the year. Of late the average cost for heating has been \$12.68 for

each student in the steam-heated dormitories, and \$6.98 in the buildings heated by warm-air furnaces or stoves. The steam-heated dormitories are also lighted by electricity, the cost of which to each of the occupants is about \$5.25 a year.

A deposit of \$1 is also made at the beginning of each term to pay for public damages, the unexpended balance of which is returned to the student at the end of the year.

Annual Expenses.—Some money for books and other incidental expenses will be needed; but, with close economy, the total annual expenses—exclusive of tuition, clothing, and traveling expenses—need not exceed \$250, as will be seen from the following summary:—

	Liberal.	Moderate.	Minimum.
General College Expenses	\$24 00	\$24 00	\$24 00
Charge for College Reading-rooms, Gymnasium, &c.	12 00	12 00	12 00
Board, 36 weeks, at \$2.85 to \$3.75 . . .	135 00	108 00	103 00
Rent of College-room, \$15 to \$90 . . .	90 00	36 00	15 00
Light and Fuel	18 00	15 00	12 00
Washing	25 00	16 00	9 00
Tuition	100 00	100 00	100 00
Books and stationery	36 00	20 00	15 00
	\$440 00	\$331 00	\$290 00
Deduct for Sons of Ministers <i>et al.</i> , in Classical Course			100 00
			\$190 00
Deduct for same in other courses . . .			\$50 00
			\$240 00
Lowest charges for neces- { Classical. sary expenses { Technical.	. . . .	. . . .	\$190 00
	. . . .	. . . .	240 00

Laboratory fees and damage assessment, which vary in amount, must also be added, while the personal expenses for clothing, &c., must be estimated according to individual experience. The first year will be made more expensive by the fees for registration and matriculation, and furnishings for room; \$300 will therefore be a small allowance.

Parents and guardians at a distance may deposit funds with some member of the Faculty, who will pay particular attention to the pecuniary concerns of the student, settling his bills, and transmitting an account of the expenditure, for which services he will charge a commission. It is strongly recommended that parents furnish their sons with little beyond what will meet their necessary expenses.

BEQUESTS AND DEVISES.

Each State has special statutory regulations in regard to wills, and it is most important that all testamentary papers be signed, witnessed, and executed in all other respects according to the laws of the State in which the testator resides. In all cases, however, the name of the corporation must be accurately given, as in the following forms:—

I give, devise, and bequeath to “The Trustees of Lafayette College,” in Easton, Pennsylvania, their successors and assigns forever, the sum of ———— dollars, to be invested by said corporation in good real estate security, and the interest accruing therefrom to be applied to the support of the Professors in said College.

I give, devise, and bequeath a certain lot, situated, &c., to “The Trustees of Lafayette College,” in Easton, Pennsylvania, and to their successors and assigns forever, for

the uses and purposes of said College, according to the provisions of its charter.

PRIZES.

The following prizes are offered annually :—

THE FRANCIS A. MARCH PRIZE IN ENGLISH.

A prize of thirty dollars in books was given from 1862 to 1881 by the late Rev. William C. Fowler, LL. D., of Durham, Connecticut, and since 1881 has been continued by Henry A. Potter, M. S. Class of '77, of New York, under the title of "The Francis A. March Prize," upon the following conditions:—

"A committee of at least three shall be chosen by the Faculty to determine which student of the Senior Class has made the greatest proficiency in English Philology.

"The decision of the committee is to be made after attending an examination in some English classic, conducted by the Professor of English, and after reading essays written by the several members of the class, which shall contain a discussion of the language of some English classic."

The subject in 1902 will be the works of Daniel Webster.

THE ASTRONOMICAL PRIZE.

A prize of thirty dollars in gold is awarded to the student making the greatest progress in the study of Astronomy in the Senior year.

MATHEMATICAL PRIZES.

Two prizes of the value of twenty dollars each are offered in the Department of Mathematics to those students of the Junior Class, one in the Classical and general courses of the Scientific Department, and one in the Technical Departments, who shall have exhibited during the first three years of the course the greatest proficiency in the study of Mathematics.

These prizes were founded, as was the astronomical prize above mentioned, in 1867, by Professor Traill Green, M. D., LL. D.

THE LOUNSBURY PRIZE IN CHAUCER.

A prize, consisting of books, is given to that student of the Sophomore Class who shall present the best essay upon some one of the works of Chaucer. This prize was given in 1896 by Thomas R. Lounsbury, Professor of English at Yale University, and will be continued by friends of the College as the Lounsbury Prize in Chaucer.

THE EARLY ENGLISH TEXT SOCIETY'S PRIZE.

A prize consisting of books is given by the Early English Text Society, of London, to that student of the Junior Class who shall at the close of the Junior year pass the best examination in "English before Chaucer." The examination is based upon selected texts announced from year to year, which in 1902 will be "Alfred's Prose."

This prize was founded in 1871.

THE NEW SHAKSPERE SOCIETY'S PRIZE.

A prize of publications of the "New Shakspeare Society," of London, is awarded to that member of the Junior Class who passes the best general examination upon Shakespeare, his works, life, character, &c.

This prize was founded in 1875.

THE CLASS OF '83 PRIZE.

A prize of the value of fifteen dollars is annually awarded to that member of the Sophomore Class who shall have attained the highest standing in his division of the class in Trench on The Study of Words.

This prize was founded by the Class of 1883 at their graduation.

COLEMAN BIBLICAL PRIZES.

Three prizes, each of the value of twenty dollars, are awarded to those students of the Freshman Class who have attained the highest standing in the several divisions of Biblical study in that year.

These prizes were founded by the Rev. Lyman Coleman, D. D., in 1880.

PRIZES IN ORATORY.

The Washington and Franklin Literary Societies appropriate one hundred dollars a year for prizes in oratory. Four contestants are chosen from each Hall to take part in the Junior Oratorical Contest, which is held in May. In the presence of a public audience three Judges, approved by the Faculty, hear the speakers and award the prizes. Their decision is based on the merits of the performances as to originality and force, with reference both to composition and delivery. The first prize is fifty dollars, the second prize thirty dollars, and the third prize twenty dollars.

PRIZES IN DEBATE.

Three prizes, of the total value of one hundred dollars, are awarded to the successful competitors in a Senior contest in debate, held on Washington's Birthday in each year, between three contestants from each of the literary societies, chosen by a competitive debate in each society prior to December 1st in the previous year. The amount of the prizes and the conditions of the award are similar to the Junior oratorical contest. The first of these contests was held in 1894. The subject for debate in 1902 is:

"RESOLVED, *That Congress should immediately pass a law for the suppression of the propaganda of anarchism.*"

CIVIL ENGINEERING PRIZE.

A prize of the value of fifty dollars, the gift of Carroll Phillips Bassett, C. E., Ph. D., of the Class of 1883, is annually awarded to that member of the graduating class who presents the best graduating thesis and attains the highest standard of scholarship in the Civil Engineering course.

THE PARK PRIZE IN LATIN.

A prize of fifteen dollars for the Latin Department has recently been founded by Mr. Samuel R. Park, '84. In 1902 it will be awarded, on the work of the second and third terms Freshman Class, for excellence in Horace.

HISTORICAL ESSAY PRIZE.

A prize, consisting of a copy of his work, "*The Marquis de Lafayette in the American Revolution*," is given annually by Charlemagne Tower, Jr., LL. D., of Philadelphia, United States Minister to Russia, to that member of the Senior Class who shall, on or before the first day of October, present the best essay on some subject connected with the relations of *France and the United States*. The essays must not exceed three thousand words in length. The subject for the year 1902 is: "*The value of the French Alliance in the War for Independence*."

THE CHEMICAL ESSAY PRIZES.

A prize of five dollars in books is awarded each term to that member of the Junior or Senior Class who shall present the best term theme on some Chemical subject.

THE GILBERT PRIZE IN OLD ENGLISH.

By the will of Howard Worcester Gilbert, who died in Chester County, March 5th, 1895, a bequest was left to the College, with the provision that a gold medal of the value of forty dollars should be awarded every two years to the student writing the best essay on the Old English Language and Literature, beginning with Beowulf, in the earliest Anglo-Saxon period, and extending down to the year 1070. Should the competitors be of equal merit, preference is to be given to residents of Pennsylvania.

The medal is an inch and three-fourths broad, three-sixteenths of an inch thick, and contains on its face a relief portrait of King Alfred, with the date 871-901, surmounted by the Anglo-Saxon phrase, "Næs he gold hwæte." The reverse shows a garland encircled with the legend, "Howard Worcester Gilbert Old English Prize. Founded 1895." Space is left for the name of the recipient.

This prize will be awarded at the Commencement of 1902. It is open to competition of students of Anglo-Saxon in the graduate courses of 1900-01 and 1901-02. The essay must be handed in by May 1st, 1902.

'85 PRIZE IN PHYSICS.

The Class of 1885 founded a prize in 1897 in the sum of \$500 the annual income of which is to be given to that member of the Junior Class who has attained the highest rank in the studies of Mechanics and Physics.

THE BLOOMBERGH PRIZE.

The Class of 1888 at its Decennial Reunion subscribed the sum of \$500, the annual income of which is to be awarded to that member of the Junior Class who shall attain the greatest proficiency in the study of the French and German languages and their literatures.

THE B. F. BARGE GOLD MEDAL.

A prize of a gold medal of the value of \$100 has been founded by Benjamin F. Barge, Esq., of Mauch Chunk, Pa., which is to be awarded to that member of the Senior Class who shall deliver the best oration in an annual contest to be held on Memorial Day, May 30th.

NOTE.—In all cases where a prize is awarded to an essay, the successful competitor must hand to the proper authority two typewritten copies of his essay before receiving the prize, if he is requested to do so.

RECENT ADDITIONS.

GIFTS TO THE DEPARTMENT OF MINING ENGINEERING AND GRAPHICS.—From Robert Johnson, Wilkesbarre: Mining tape and reel. From Jeffrey Manufacturing Company: Cable-conveying machinery. From A. J. Underwood, E. M., '95, Robinson, Utah: Specimens of copper ore. From Jeanesville Iron Works, Jeanesville: Blue prints of mine pumps. From H. J. Stevens, Houghton, Mich.: A copper-mining manual. From Birdsboro Diamond Drill Company: Imitation diamond bit and sample of belt lacing. From Laird H. Barber, M. C., '71, Mauch Chunk, Pa.: United States Geological Survey Reports, &c. From W. S. Yeater, Atlanta, Ga.: Eight volumes of mine reports. From M. H. Francis, '91, Brownsville, Pa.: Mine-car grip. From Charles L. Bryden, '02: Pennsylvania Mine Inspectors' Reports.

THE DEPARTMENT OF ELECTRICAL ENGINEERING has received gifts from John W. Mengel, '02, Baltimore, Md.

THE DEPARTMENT OF GEOLOGY.—From Wallace S. Ayers, C. E., of the class of '72, of Hazleton: A number of coal fossils, among them the section of a tree trunk; also a large slab of sandstone, covered with unusually large and well-formed quartz crystals. Also a stalactite from Mount Union Cave, Huntingdon County, the gift of the family of the late Rev. David H. Campbell, D. D., of the Class of '72. Rev. Edwin McMinn, of Salem, N. J., has deposited with this Department his extensive collection of minerals and fossils, numbering over two thousand valuable specimens.

The College has received the private collection of minerals, rocks, and fossils belonging to the late Samuel W. Barber, of St. Louis, of '40.

The collection of minerals gathered by James T. Doran, A. M., of '48, has been presented to the College by his widow.

In addition to the above, special mention should be made of the bequest to the College of the private collections of the late Traill Green, M.D., LL. D., whose connection with Lafayette College extended through the long period of sixty years, from 1837 to 1897, and by whose death the institution lost one of its stanchest and most eminent supporters. The collections consist of between three and four thousand specimens of rocks, minerals, and fossils, many of which are from foreign localities.

DEGREES CONFERRED.

HONORARY DEGREES.

June 19th, 1901.

DOCTOR OF LAWS.—Hon. William Wilson Schuyler, A. M., '49, Easton, President Judge of Northampton County Courts.

MASTER OF ARTS.—Elijah J. Richards, '81, Easton.

October 23d, 1901.

DOCTOR OF DIVINITY.—Rev. John Taylor Hamilton, Professor in Moravian College and Theological Seminary, Bethlehem.

MASTER OF ARTS.—Addison L. Jones, Principal of Schools, West Chester.

DEGREES IN COURSE.

June 19th, 1901.

BACHELOR OF ARTS.—I. H. Berg, N. Y.; N. J. Bruen, N. J.; J. G. Chalmers, N. Y.; A. L. Crossley, Pa.; J. L. Dougherty, Pa.; C. K. Ferer, Pa.; J. M. Hinckley, Pa.; W. C. Isett, Pa.; R. E. James, Jr., Pa.; H. B. Kutter, Pa.; H. Markarian, Asia Minor; A. H. Morrison, Pa.; H. H. Reichard, Pa.; E. J. Rhoad, Pa.; C. Ricker, Pa.; F. O. Risher, Pa.; H. P. Rothermel, Pa.; W. L. Sahler, N. Y.; J. S. Schantz, Pa.; J. E. Sickler, Pa.; J. C. Steele, Pa.; J. F. Tim, Pa.; R. Tinsman, N. J.; J. L. Wallace, Pa.; A. H. Weller, N. J.; F. R. Wood, Pa.; C. H. Yerkes, Pa. Total, 27.

BACHELOR OF PHILOSOPHY.—A. D. Chandler, Pa.; A. D. Craig, Pa.; A. K. Detwiller, Pa.; O. F. Harvey, Jr., Pa.; E. R. Hughes, Pa.; H. S. Keller, Pa.; F. H. Laubach, Pa.; W. R. McDermott, Pa.; W. A. McMurtrie, N. J.; B. J. Meyers, Pa.; W. S. Petty, N. J.; F. Reeder, Jr., Pa.; R. H. Rice, Pa.; M. Rosenbaum, Md.; J. W. Ruef, N. Y.; J. L. Slattery, N. J.; P. H. Vliet, N. J.; J. F. Wagner, Pa.; S. E. Weber, Pa.; J. A. Wilson, Mich.; C. Yon, Pa. Total, 21.

BACHELOR OF SCIENCE.—W. J. Birdsall, Pa.; E. N. Eisenberg, Pa.; L. P. Runyon, N. J.; J. A. Pierce, '98, October 23d. Total, 4.

BACHELOR OF SCIENCE (in Chemistry).—E. A. Cary, N. J.; L. C. Condit, N. J.; J. J. Howard, Pa. Total, 3.

CIVIL ENGINEER.—H. B. Bacon, Pa.; A. D. Chidsey, Jr., N. J.; H. A. Kotz, Pa.; T. H. Thomas, Pa.; F. M. Weaver, Pa. Total, 5.

MINING ENGINEER.—H. A. Guiley, Pa.; W. Hughes, N. J.; G. S. Kennedy, Pa. Total, 3.

ELECTRICAL ENGINEER.—C. W. Beers, Pa.; B. G. Eckard, Pa.; J. A. Morgan, Pa.; W. F. Schmidt, Pa.; R. B. Tenney, Jr., D. C.; M. L. White, Pa. Total, 6.

MASTER OF ARTS (Class of '90).—James Maurer. (Class of '91).—W. L. Sanderson. (Class of '96).—D. M. Bachman, S. A. Bower, S. D. Manifold. (Class of '97).—G. B. Milner. (Class of '98).—D. Babp, E. C. Clifton, J. D. Craig, C. D. Crobaugh, H. Cunningham, W. R. Davison, M. A. Filson, J. W. Gruver, F. F. Kennedy, J. C. Mattes, W. J. Patton, M. R. Trexler. (Class of '99).—H. W. Shimer, H. J. Lucke, (Johns Hopkins, '98.) Total, 20.

MASTER OF SCIENCE (Class of '98).—G. Doremus, J. K. Gearhart, G. F. Greiner, C. S. Kelchner, C. C. More, I. S. Myers, A. P. Reese, C. W. Riegel, W. B. Sutliff. Total, 9.

Total—First Degree, 69; Master's Degree, 29.

COMMENCEMENT DISTINCTIONS, 1901.

HONORS.—A. L. Crossley, Danville, Valedictory; E. R. Hughes, Scranton, Philosophical; J. E. Sickler, Mill City, Historical; R. B. Tenney, Jr., Washington, D. C., Scientific; A. H. Weller, Broadway, N. J., Latin Salutatory.

SPECIAL ORATIONS.—C. W. Beers, Wilkesbarre, Mathematical; H. Markarian, Tarsus, Asia Minor, Classical; S. E. Weber, Troutville, Philological.

ORATIONS.—H. B. Bacon, Easton; L. C. Condit, Brooklyn, N. Y.; C. K. Ferer, Riegelsville; H. A. Guiley, South Easton; J. M. Hinckley, Danville; W. Hughes, Warren Paper Mills, N. J.; H. A. Kotz, Sandt's Eddy; W. R. McDermott, Fawn Grove; H. H. Reichard, Stout's; J. W. Ruef, Poughkeepsie, N. Y.; W. L. Sahler, Pataukunk, N. Y.; J. L. Slattery, Flemington, N. J.; T. H. Thomas, South Easton; J. L. Wallace, Allegheny. Total, 22.

PRIZES AWARDED.

THE JOHN SCOTT LEGACY MEDAL AND PREMIUM was awarded in October, 1901, by the Franklin Institute, of Philadelphia, to Porter W. Shimer, E. M., Ph. D., of the Faculty, for the invention of his Combustion Crucible.

THE FRANCIS A. MARCH PHILOLOGICAL PRIZE: S. E. Weber, Troutville.

THE ASTRONOMICAL PRIZE: Hagop Markarian, Tarsus, Asia Minor.

THE BASSETT PRIZE IN CIVIL ENGINEERING: H. A. Kotz, Sandt's Eddy, and Thomas H. Thomas, Easton.

CHARLEMAGNE TOWER PRIZE IN FRENCH HISTORY: E. R. Hughes, Scranton.

SENIOR DEBATE: February 27th, 1901.

FIRST PRIZE: E. J. Rhoad, Bath.

SECOND PRIZE: W. L. Sahler, Pataupunk, N. Y.

THIRD PRIZE: A. H. Weller, Broadway, N. J.

B. F. BARGE ORATORICAL PRIZE: Gold Medal, \$100, Robert E. James, Jr., Easton.

CHEMICAL PRIZE: L. C. Condit, Brooklyn, N. Y.

JUNIOR PRIZEMEN.

THE MATHEMATICAL PRIZES:—

CLASSICAL DEPARTMENT: Thomas Morgan, Wilkesbarre.

TECHNICAL DEPARTMENT: O. F. Sieder, Newark, N. J.

THE EARLY ENGLISH TEXT SOCIETY'S PRIZE (London): H. S. Ficke, Dubuque, Iowa.

JUNIOR ORATORICAL PRIZES, Contest May 20th, 1901.

SPEAKERS.

Washington Hall:

S. T. ACHENBACH,

H. J. KUEBLER,

T. MORGAN,

J. A. NESBITT.

Franklin Hall:

B. H. EVANS,

D. A. KLINE,

M. G. READINGER,

F. S. WRIGHT.

FIRST PRIZE: Fifty dollars, F. S. Wright, Barnegat, N. J.

SECOND PRIZE: Thirty dollars, Thomas Morgan, Wilkesbarre.

THIRD PRIZE: Twenty dollars, John A. Nesbitt, Colora, Md.

THE CLASS OF '85 PRIZE IN PHYSICS: H. S. Ficke, Dubuque, Iowa.

JUNIOR CHEMICAL PRIZES (for the best Term Theme): W. P. Fitzgerald, Wilkesbarre.

THE BLOOMBERGH PRIZE: Divided between Thomas Morgan, Wilkesbarre, and Otto F. Theis, Germania.

SOPHOMORE PRIZEMEN.

THE LOUNSBURY PRIZE IN CHAUCER: Charles F. Garis, Easton.

CLASS OF '83 ENGLISH PRIZE: Charles F. Garis, Easton.

FRESHMAN PRIZEMEN.

LYMAN COLEMAN BIBLICAL PRIZES.

SECTION A.: Raymond M. Freed, Perkasio.

SECTION B.: Earl Lavers, Easton.

SECTION C.: Leroy S. Wolff, Congruity, Pa.

THE PARK PRIZE IN LATIN: Earl H. Barnes, Perth Amboy, N. J.

ORATORICAL PRIZES, *Franklin Hall*: First, H. D. Bailey, Easton; second, Raymond M. Freed, Perkasio. *Washington Hall*: First, Henry F. Flumerfelt, Tunkhannock; second, Stacy L. Roberts, Williamsport.

CLASS MONITORS.

Appointed for general Excellence in study:—

SENIOR CLASS: Thomas Morgan.

JUNIOR CLASS: E. W. Greiner.

SOPHOMORE CLASS: C. H. Canning.

FRESHMAN CLASS: J. L. Jones.

Theses Presented by Candidates for Degrees in the Technical Courses of the Pardee Scientific Department.

JUNE 19th, 1901.

1. The Action of Acetona on Magnesium Nitride.

LEWIS CARY CONDIT, Brooklyn, N. Y.

2. Changes that take place in Malleable Cast Iron during Annealing.

JOHN JAMES HOWARD, Duquesne.

3. A Rapid Method for Sulfur Determination.

EDWARD ARTHUR CARY, Montclair, N. J.

4. The Ingersoll-Sergeant Air Compressor.

HENRI AUGUSTUS GUILLEY, South Easton.

WILLIAM HUGHES, Warren Paper Mills, N. J.

GERALD JOSEPH KENNEDY, South Easton.

5. Review of the Belvidere Lighting Plant.

CHARLES WASHINGTON BEERS, Wilkesbarre.

BAYARD GELSTON ECKARD, Easton.

JOHN ARTHUR MORGAN, Slatington.

WILLIAM FRED SCHMIDT, Shenandoah.

ROBERT BARNARD TENNEY, Jr., Washington, D. C.

MARTIN LUTHER WHITE, Lewistown.

6. Lost Head in Gate Valves.

THOMAS HAROLD THOMAS, South Easton.

HARRY ARTHUR KOTZ, Sandt's Eddy.

7. Determination of the Effect of Stone Dust on the Strength of Cement in Concrete.

HOWARD BURKE BACON, Easton.

FRANK MAURICE WEAVER, Easton.

8. Bearing Value of Wood on Iron Bolts.

ANDREW DWIGHT CHIDSEY, Jr., Easton.

THE ALUMNI ASSOCIATION.

The Alumni Association is composed of Graduates of the College and such former students as left College before graduation, in good standing, as may be elected. The annual meeting is held on Tuesday preceding Commencement Day.

The Association has the privilege of choosing six members of the Board of Trustees, who hold office for six years. In June, 1900, John Markle, of Jeddo, '80, and Hon. John E. Fox, of Harrisburg, '85, were chosen. In the spring of 1902 two more will be voted for.

The executive committee is as follows: McCluney Radcliffe, M. D., '77, Chairman, Philadelphia; Rev. A. N. Hagerty, '81, Carlisle; Capt. F. R. Drake, '86, Easton; Rev. D. H. Martin, '91, Wissabickon; H. R. Hoard, '98, Mansfield.

The oration before the Association was delivered on June 18th by James W. King, Esq., of Philadelphia.

It is desirable to keep up the full record, so long maintained, of the residences, occupations, literary efforts, and public services of the alumni and former students of the College.

Information is solicited in regard to these points, and also in reference to matters appropriate to the obituary record, which is annually prepared for the Alumni Association.

ALUMNI ASSOCIATION OF LAFAYETTE.

HON. FRANK G. HARRIS, '76, Harrisburg *President.*
WM. L. SHEAFER, '78, Pottsville *Vice-President.*
PROF. SELDEN J. COFFIN, '58, Easton *Secretary and Treasurer.*

LOCAL ASSOCIATIONS.

THE LAFAYETTE ALUMNI ASSOCIATION OF PHILADELPHIA AND VICINITY.

VICTOR WIERMAN, '76, York *President.*
CHAS. B. ADAMSON, '77, 730 Market Street *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF NEW YORK AND VICINITY.

GEORGE C. AUSTIN, '85, 192 Broadway, New York *President.*
JESSE GRANT ROE, '87, 120 Broadway, New York *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
NORTHEASTERN PENNSYLVANIA.

FRANK L. PHILLIPS, '91, Scranton *President.*

EVAN JONES, '99, Wilkesbarre *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
THE WEST BRANCH.

FRED H. PAYNE, '88, Williamsport *President.*

R. FLEMING ALLEN, '90, Williamsport *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
CENTRAL PENNSYLVANIA.

REV. D. K. FREEMAN, D. D., '56, Huntingdon *President.*

REV. A. N. HAGERTY, '81, Carlisle *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
WESTERN PENNSYLVANIA.

REV. E. J. KNOX, D. D., '77, Allegheny *President.*

JOHN D. CLARKE, '98, Pittsburgh *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION
OF MARYLAND.

ROBERT H. SMITH, '67, 53 St. Paul Street, Baltimore . . *President.*

PEARCE KINTZING, M. D., '81, Baltimore *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
CHICAGO AND VICINITY.

WILLIAM A. DOUGLASS, '72, Chicago *President.*

LESLIE F. GATES, '97, 203 Wabash Boulevard, Chicago . *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
THE NORTHWEST.

HON. ALEXANDER RAMSEY, '36, St. Paul, Minn. *President.*

HON. JAMES T. HALE, '77, Duluth, Minn. *Secretary.*

THE LAFAYETTE ALUMNI ASSOCIATION OF
WASHINGTON, D. C.

JAMES F. R. APPLEBY, M. D., '64, Georgetown *President.*

SNOWDEN ASHFORD, '88, 918 Farragut Square *Secretary.*

STUDENTS.

GRADUATE STUDENTS.

- J. G. Becht, M. S., Pa. Philosophy and History,
Lafayette, '90.
- James H. Closson, M. D., Pa. Biology
- J. D. Geist, A. M., Pa. Latin and German " '97.
- S. B. Gilhuly, A. M., N. J. History and English Literature,
Lafayette, '86.
- J. B. Hensch, A. M., Pa. Latin " '83.
- H. J. Lucke, B. S., Md. Mathematics
Johns Hopkins University, '98.
- John L. March, A. M., N. Y. Philology and Ger-
manic Languages, Lafayette, '93.
- H. C. Mohn, A. M., Pa. Philosophy and Pedagogy, " '95.
- S. B. Opdyke, A. B., Pa. Chemistry
Wesleyan University, '93.
- E. F. Reimer, A. M., Pa. Philology Lafayette, '97.
- A. C. Sawtelle, A. B., Pa. History " '00.
- E. Schuyler, M. S., Pa. Mathematics and Physics, " '97.
- H. W. Shimer, A. B., Pa. Geology " '99.
- G. W. Twitmyer, A. M., Del. Philosophy and Pedagogy,
Franklin and Marshall, '84.
- A. B. Wallize, A. B., Pa. English and Latin Lafayette, '99.
- E. L. Whatenecht, A. M., O. Philosophy " '95.

SENIOR CLASS, 1902.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Sol. Thomas Achenbach	C.	Nazareth	81 N.
Porter Allen †	C. E.	Williamsport	107 McK.
John Leonard Baer †	C.	York	—
Robert Asa Beers	L.	Mauch Chunk	163 E.
James Hamill Boal	C.	Port Carbon	34 S.
David Robert Brown †	G. S.	Springfield, So. Dak., D. K. E.	
William Whiteley Bryan	C. E.	Phillipsburg, N. J.	
190 Chambers Street.			
Charles Lazarus Bryden	E. M.	Pittston	74 K.
Robt. Blythe Cunningham, C.	C.	Fairfield	134 M.
Victor Vanlew Currier	L.	Grampian	80 N.
Walton Jay Dietrich	L.	Mount Bethel	39 S.
Benjamin Hughes Evans †	C.	Norristown	136 F.
Thomas Campbell Fassitt, †	L.	Easton	506 Reeder St.
George Elwood Fetters	E. E.	Malvern	12 S.
Herman Styles Ficke	L.	Dubuque, Iowa	82 N.
William Preston Fitzgerald, Ch.	C.	Wilkesbarre	33 S.
Waldo Noble Hackett	C.	Easton	311 Clinton St.
John Parker Harley	L.	Dewart	129 M.
Lawrence Leopold Iseman	L.	Kansas City, Mo.	138 F.
John Ingham Kinsey, Jr.	C.	Easton	215 Reeder.
Daniel Aumiller Kline	L.	Liverpool	25 S.
Leighton Green Knipe †	C. E.	Oceanic, N. J.	142 P.
Harry Joseph Kuebler	C.	Easton	310 S. 4th St.
Francis Patrick McCluskey, L.	L.	West Easton	Home.
William Ross McCommon	E. E.	Oxford	70 B.
Seth Thos. McCormick, Jr.	L.	Williamsport	137 F.
Elwood Gordon Mateer	L.	Altoona	66 B.
William McLees Meek	L.	Spring Garden	33 S.
John William Mengel	C. E.	Baltimore, Md.	
200 McCartney St.			
Thomas Morgan	C.	Wilkesbarre	68 B.
Abram Linford Myers	C.	Perkasie	122 McK.
John Alison Nesbitt	C.	Colora, Md.	42 S.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Joseph Armstrong Nevin	G. S.	Jersey City, N. J.	106 McK.
Frank McCormick Painter	C.	Williamsport	151 P.
John Rogers Peale	C.	New Bloomfield	84 N.
William Henry Peters	C.	Delhi, N. Y.	68 B.
Karl Campbell Prichard	L.	Catlettsburg, Ky.	78 K.
Morris Gauker Readinger	C.	Dryville	167 E.
Parke Richards	C.	Pittston	34 S.
Winfield S. Hancock Roper,†	C. E.	Slatington	136 F.
Judson Raymond Rude	C.	White's Valley	161 E.
Robert Milton Salmon	L.	Honesdale	D. K. E.
Albert Frederick Seem	Ch.	Bangor	149 P.
Ralph Berger Seem	L.	Bangor	146 P.
William Krieble Seibert	C.	Worcester	37 S.
Benjamin Moore Sheppard,	C.	Easton	503 Reeder Street.
Jacob Marvin Shick	L.	Ferndale	46 S.
William Henry Shindel	L.	Middleburg	138 F.
Otto Ferdinand Sieder	C. E.	Newark, N. J.	82 N.
Joseph Osmun Skinner	L.	Phillipsburg, N. J.	164 Washington St.
Clarence Victor Sloan	G. S.	Phillipsburg, N. J.	21 S.
James Rea Stockton	L.	Pittsburgh, Pa.	57 S.
William Hiram Stroh	L.	Mauch Chunk	127 M.
Otto Frederick Theis	L.	Germania	134 M.
Jacob Parks Warner	L.	Easton	31 Warren St.
William James Williams†	C.	Kingston	132 M.
Frederick Starr Wright	C.	Barnegat, N. J.	D. K. E.

SENIORS 57

JUNIOR CLASS, 1903.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Arthur Shinkle Baker . . .	C. . . .	Pittsburgh	86 N.
George Bell	C. E. .	Marysville	79 N.
Harold Herman Bender . . .	C. . . .	Martinsburg, W. Va. .	
		Prof. Hall's.	
Clinton ArtiniasBergstresser,C.	. . .	South Bethlehem . . .	83 N.
Thomas Burns	C. . . .	Moosic	169 E.
Walter David Bushnell . . .	L. . . .	Harrisburg	128 M.
Ralph Robert Carter, Jr. ‡ .	E. M. .	Mauch Chunk	74 K.
Herbert Cole	C. . . .	Stone Church	23 S.
George Copeland	C. . . .	Philadelphia	171 E.
Frank Brockett Cunnings-			
ham	C. E. .	Indiana	D. K. E.
David Dudley Cure	G. S. .	Jermyn	—
William Sheridan Dawson .	C. . . .	Glendon	Home.
Franklin Kaercher Day . . .	C. E. .	Hazleton	105 McK.
Earl Ernst	L. . . .	Denison, Texas	152 P.
Fred Falkner	C. E. .	Wyoming, N. Y.	66 B.
Edmund Foltz Ferer	E. M. .	Riegelsville	147 P.
Ralph Manasses Fraunfelter, L.	. . . .	Easton	220 McCartney St.
Augustus Henry Fretz	L. . . .	Doylestown	146 P.
Charles Fred Fleming Garis, L.	. . . .	Easton	207 Ferry St.
Jesse Godfrey	C. . . .	Stewartsville, N. J. . .	86 N.
Howard Reuben Gold	C. . . .	Nazareth	62 B.
Harry Gordon	C. E. .	Boonton, N. J.	56 S.
Lynn James Green ‡	C. E. .	Utica, N. Y.	76 K.
Ernst Wilhelm Greiner	L. . . .	Benezette	174 E.
Otto Albert Greiner	L. . . .	Benezette	174 E.
Clyde Graeme Guthrie	C. . . .	Indiana	D. K. E.
Edward Clayton Haldeman, ‡	C. E. .	Philadelphia	155 E.
Walter Stanley Haldeman ‡	C. E. .	Philadelphia	159 E.
Charles Henry Hartge	L. . . .	Glen Savage	24 S.
Albert Long Hill	C. E. .	Scottdale	100 McK.
Robert Botsford Hitchcock .	Ch. . .	Scranton	157 E.
Harry Edgar Hoffman	C. . . .	Annandale, N. J.	168 E.
John Canfield Howe	Ch. . .	Passaic, N. J.	87 N.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
William Lester Jacobus . . .	Ch. . .	Newark, N. J.	85 N.
Chester Arthur King . . .	C. . .	Phillipsburg, N. J. . . .	
		436 S. Main St.	
Benjamin Aumiller Kline . .	L. . .	Liverpool	25 S.
Harry Hubbard Larkin ‡ . .	Ch. . .	Buffalo, N. Y.	131 M.
Herbert Franklin Laub . . .	C. . .	Nazareth	116 McK.
Raymond Lerch	C. . .	Phillipsburg, N. J. . . .	
		67 Harris St.	
Ellwood Hunter McClelland, L. . . .		Rockdale Mills	130 M.
Michael Edward Maloney . . .	C. . .	Phillipsburg, N. J. . . .	
		38 Wilson St.	
Joseph McEwen Marquis ‡ . .	C. E. .	Chester, S. C.	—
Frank Launtz Miller . . .	L. . .	Bakersville	19 S.
Jesse Houser Miller ‡ . . .	L. . .	Southwest	139 F.
Joshua Lewis Miner . . .	C. . .	Wilkesbarre	114 McK.
David Hubbell More . . .	L. . .	Bangor	165 E.
Charles Howard Ortt . . .	C. . .	Pennsburg	35 S.
Chauncey Hulbert Peacock † . .	L. . .	Philadelphia	110 McK.
Carl Frederic Pfatteicher . .	C. . .	Easton	49 S. 5th St.
Edward David Phillips . . .	L. . .	Peely	64 B.
William Agnew Pollock . . .	Ch. . .	Allentown	121 McK.
Budd Jameson Reaser . . .	C. . .	Phillipsburg, N. J. . . .	
		149 Mercer St.	
Henry Carl Richter . . .	L. . .	Dubuque, Iowa	D. K. E.
Charles Fox Rumbaugh † . .	E. E. .	Mt. Pleasant	130 F.
William Howard Rush ‡ . . .	G. S. .	Pittsburgh	148 P.
Charles Turner Sands † . . .	C. . .	Philadelphia	—
James Monroe Shelley . . .	C. . .	Bally	35 S.
Frederic Augustus Shimer † . .	C. E. .	Easton	313 Bushkill St.
Frank Cline Shipman . . .	C. . .	Phillipsburg, N. J. . . .	
		14 Bennett St.	
John Charles Skuse ‡ . . .	E. M. .	Duluth, Minn.	119 McK.
Louis Wolle Smith . . .	C. . .	Phillipsburg, N. J. . . .	
		40 Fayette St.	
William Mackay Smith . . .	L. . .	Chambersburg	133 M.
Martin Clay Stayer ‡ . . .	C. . .	Altoona	75 K.
Daniel Edwin Steckel . . .	C. . .	Easton	48 Centre Sq.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Joseph Frederick Steele . .	L. . .	Easton . 700 Paxinosa Ave.	
Merrill Peter Steele	C. . .	Goff	166 E.
Warren Stoutnour	C. E.	Everett	32 S.
John Prince Treadwell, Jr.,	G. S.	Norwalk, Conn. .	137 McK.
Harry Edgar Trout	C. E.	Lykens	92 McK.
George Emanuel Twitmyer, L. . .		Wilmington, Del. .	102 McK.
Joseph Clyde Twitmyer ‡ .	Ch. .	Wilmington, Del. .	102 McK.
Stewart Mann Uhler	C. . .	Stockertown	67 B.
Alfred Abraham Walter . .	C. . .	Wilkesbarre	70 B.
William John Welsh, Jr. ‡ .	Ch. .	Scranton	76 K.
Joseph Emil Wiedenmayer ‡	Ch. .	Newark, N. J. . . .	99 McK.
Wilbur Emerson Winder ‡ .	C. E.	Williamsport	72 B.
Walter Edward Woods † . .	L. . .	Pine Grove Mills . .	—
William Aaron Yeisley . .	C. . .	Easton	23 S.

JUNIORS 78

SOPHOMORE CLASS, 1904.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Louis Anderson, Jr.	E. E. . .	Bloomsbury, N. J. . .	38 S.
Walter Ellsworth Bachman.†	C. E. . .	Phillipsburg, N. J., 97 N. Main.	
Harry Daniel Bailey	C. . . .	Easton	536 Berwick St.
Edward Harold Barnes	C. . . .	Perth Amboy, N. J. . .	60 S.
Charles Glen Beadenkopf, .	Ch. . . .	Wilmington, Del. . . .	140 F.
Fred Adam Blaicher	Ch. . . .	Newark, N. J. . . .	136 McC.
William Lobb Blake †	E. E. . .	Bangor	87 N.
Arthur Joseph Blewitt † † .	L. . . .	Scranton	97 McK.
Charles Lewis Bolton	C. E. . .	Philadelphia	63 B.
Leonard Gansevoort Brad-			
ley †	E. M. . .	Duluth, Minn. . . .	73 K.
Arthur Lawrence Brod-			
head †	E. E. . .	Delaware Water Gap .	
			115 McK.
Athel Campbell Burnham †	Ch. . . .	Brooklyn, N. Y. . . .	140 F.
Charles Hewson Canning . . .	C. . . .	West Chester	D. K. E.
John Earl Carpenter	E. M. . .	Phillipsburg, N. J. . .	
			151 Washington St.
Russell Kennedy Carpenter †	C. E. . .	Easton	412 Parsons St.
George Milton Castles † . . .	E. E. . .	Phillipsburg, N. J. . .	
			177 Chambers St.
Robert Ray Chamberlin	C. . . .	Palmerton	32 S.
Thomas McKeen Chidsey	C. . . .	Easton	Paxinos Ave.
Howard Albert Clark	C. . . .	Bridgeton, N. J. . . .	84 N.
Eugene Richard Coleman	C. . . .	Hackettstown, N. J. . .	51 S.
John Earl Coolidge	C. . . .	Scranton	13 S.
James Henry DeLong	Ch. . . .	Hancock	44 S.
Frederick Knecht Detwiller †	L. . . .	Easton	52 Centre Sq.
Earl Ralph Dooley	C. . . .	Hancock, N. Y. . . .	57 S.
Edward Eugene Dreisbach . . .	C. . . .	Easton	219 High St.
Walter Wallace Drew †	C. E. . .	McKeesport	—
William Malcolm Duncan	C. . . .	High Spire	31 S.
John Abraham Ernst	C. E. . .	Llewellyn	40 Cattell St.
Henry Fisher Flumerfelt . . .	L. . . .	Tunkhannock	58 S.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Arthur Samuel Fox	C. . . .	Easton	17th and Lehigh Sts.
Frank Asa Frear	L. . . .	Lake Winola	58 S.
Raymond Moore Freed . . .	C. . . .	Perkasie	36 S.
James Richard Frow† . . .	C. . . .	Lewistown	117 McK.
Thomas Omar Gilland . . .	C. E. . .	Shamokin	D. K. E.
Edwin Hulick Glanz † . . .	C. E. . .	Easton	145 Bushkill St.
Richardson Hand	C. E. . .	Wilkesbarre . . .	107 McK.
Richard Newell Hart . . .	Ch. . . .	Easton	Prof. Hart's.
Thorndyke Harvey	C. . . .	West Chester . . .	D. K. E.
Walter Sylvester Hertzog .	C. . . .	Shamokin	62 B.
George Cornelius Hill . . .	C. . . .	Mahopac, N. Y. . .	38 S.
Clinton Thielens Hilliard .	E. E. . .	Easton	214 N. 3d St.
John Hodgson	C. . . .	Avoca	156 E.
Clarence Ricker Hopper † .	Ch. . . .	Newark, N. J. . . .	127 M.
John Estell Iszard	L. . . .	May's Landing, N. J..	152 P.
Joseph Paul Jennings . . .	C. E. . .	Forest City	173 E.
Walter Johnston	C. E. . .	Philadelphia	149 P.
William Wallace Johnston .	C. . . .	Shields.	122 McK.
Joseph James Kehler, Jr. .	C. . . .	Frackville	118 McK.
Matthew Da Tobin Kelley .	C. E. . .	Easton	142 S. 6th St.
Wm. Carpenter Kennedy, .	L. . . .	Bloomsbury, N. J.,	834 Ferry.
William Miles Kieffer . . .	C. . . .	Milton	601 High St.
Forrest Jacob Kleinhans . .	C. . . .	Easton, . .	Philadelphia St.
Harrison Edward Knauss . .	L. . . .	Easton	815 Ferry St.
Alfred Theodore Koehler .	E. E. . .	Easton	42 S. Green St.
Olin York Kyte	L. . . .	Pittston	108 McK.
Lewis Marvin Larned † . . .	L. . . .	Wilkesbarre	64 B.
Fred Launt †	L. . . .	Walton, N. Y. . . .	91 McK.
Earl Roy Lavers	C. . . .	Easton	324 Cattell St.
Theron Lee	C. . . .	Carbondale	14 S.
Clarence Webster MacDow- ell †	C. E. . .	Philadelphia	75 K.
James Norris McDowell . .	C. . . .	Principio, Md. . . .	30 S.
Charles McCord Means . . .	C. . . .	Shippensburg	65 B.
Howard Milton Merritt . .	L. . . .	Winburne	22 S.
Hugh McNair Miller . . .	Ch. . . .	Harmony, N. J. . . .	Home.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Harold Miles Miskey *	C. E.	Philadelphia	—
Peter Bernard Monahan †	C. E.	Easton	31 Madison St.
Henry Miller Morey	C. . . .	San Antonio, Texas . .	151 P.
William George Morgan . . .	Cl. . . .	Bristol, England . . .	71 B.
James Nicol Muir	L. . . .	Waverly, N. Y. . . .	95 McK.
Clarence Floyd Nagle	E. E. . .	York	206 McCartney St.
Lloyd Dutt Ott	C. E. . .	Easton	230 McCartney St.
John Frederick Parsons . . .	L. . . .	Upland	12 S.
James Edward Platt	E. E. . .	Laceyville	150 P.
George Edwin Post	E. E. . .	Phillipsburg, N. J. . .	
		310 Chambers St.	
Frank Howard Raub †	C. E. . .	Easton	719 Cattell St.
Emanuel Theodore Rehrig . .	C. . . .	Easton	107 Madison St.
Stacy Lippincott Roberts . .	C. . . .	Williamsport	90 N.
James Andrew Root	C. . . .	Easton	44 S.
Claire Porter St. John † . . .	E. E. . .	Brooklyn, N. Y. . . .	77 K.
Matthew Johnston Scamnell	Ch. . . .	Trenton, N. J. . . .	106 McK.
Thomas Marshall Scott † . . .	E. M. . .	Pittsburgh	113 McK.
Frank Wilson Sebring	C. . . .	Jersey Shore	30 S.
Lewis Llewellyn Segur	C. E. . .	Patterson, N. Y. . .	130 McC.
Silas Howard Shoch	L. . . .	Selinsgrove	78 K.
Franklin William Shaw	L. . . .	Patchogue, N. Y. . . .	85 N.
Robert Pattison Slough . . .	L. . . .	Easton	509 Canal St.
Joseph Wilson Smith	C. E. . .	Hazleton	105 McK.
Roy Frank Snyder	C. . . .	Easton	932 Wash'n St.
Raymond John Snyder †	L. . . .	Lehighon	98 McK.
Thomas Franklin Soles	L. . . .	McKeesport	99 McK.
Rodney Long Stewart	C. E. . .	Easton	Canal St.
J. A. Garfield Stitzer	C. . . .	Schuylkill	176 E.
David Styer	C. E. . .	Burlington, N. J. . . .	89 N.
Elbert Le Roy Swezey	E. E. . .	Middle Island, N. Y. .	22 S.
Leroy Dey Swingle	L. . . .	Dunmore	
		Bullman & Fillmore Sts., Pbg.	
Henry August Theis	L. . . .	Germania	139 F.
William Gilbert Tillman † . .	C. . . .	Easton	5 N. Fifth St.
Sargeant Prentiss Turnbach, Ch.	Ch. . . .	Hazleton	108 N. 7th.

* Died July 20th, 1901.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
James Arthur Van Atta . . .	C. . . .	Hackettstown, N. J. . .	Home.
John Oberley Vanatta . . .	L. . . .	Brainerds, N. J., 100 Cattell St.	
Charles Joseph Walker . . .	E. E. . .	Mayfield	65 B.
Raymond Irwin Waltman . . .	C. E. . .	Easton	517 Centre St.
Fred Erastus Ward	L. . . .	Easton	1119 Ferry St.
Henry Heil Werner	Ch. . . .	Bangor	170 E.
John Edward Werner	C. E. . .	Bangor	172 E.
Raymond Geiser Whitesell, C. . . .		Easton	700 Walnut St.
Floyd Grant Wilcox	C. E. . .	Bangor	153 E.
James Homer Wilson	L. . . .	Cumberland, Md. . . .	145 P.
Albert Negley Wolff	C. . . .	Welsh Run	21 S.
Leroy Senour Wolff	C. . . .	Congruity	164 E.
Arthur Heath Woodworth . . .	C. . . .	Sayre	81 N.
Andrew Addison Wren † . . .	Ch. . . .	Trenton, N. J. . . .	77 K.
SOPHOMORES			112

FRESHMAN CLASS, 1905.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Ewers Purdy Aldredge . . .	E. E. . .	St. Clairsville, Ohio,	83 Newkirk.
John Griffith Atwood . . .	C. . . .	Albany, N. Y.,	197 Chambers, Ph'bg.
William Strader Barcalow . .	E. E. . .	Easton	Ferry St.
Oscar Ogilvie Barr	L. . . .	Pine Grove	_____
John Nathan Bechtel	L. . . .	Bally	36 S.
William Vanderveer Berg . .	C. . . .	Ellenville, N. Y. . .	S. 4th.
Robert Patrick Blewitt . . .	E. M. . .	Mexico, Mexico . . .	97 McK.
Robert Whitfield Bowlby . .	C. . . .	Easton	13th and Ferry.
Ralph Johnson Boyd	C. . . .	Hensel	328 McC.
Albert Brown	E. M. . .	Hazleton	230 McC.
Harold Atwood Brown	E. E. . .	Glen Ridge, N. J. . .	135 F.
Robert Brown, Jr.	C. . . .	Stroudsburg	50 S.
Joseph Thomas Caldwell . .	G. S. . .	Liberty Grove, Md. . .	88 N.
Edward Irvin Campbell . . .	C. . . .	Easton	405 Burke St.
Edward Percy Case	L. . . .	Patchogue, N. Y. . . .	48 S.
Frank Campfield Case	C. . . .	Phillipsburg, N. J. . .	165 N. Main St.
Mortimer David Case	L. . . .	Patchogue, N. Y. . . .	48 S.
Edwin Dubois Chase	Ch. . . .	Easton	1042 Northampton St.
William Hamlin Cline	E. E. . .	Phillipsburg, N. J. . .	Home.
Elton Hector Closs	L. . . .	Rose, N. Y.	79 N.
Nathan Stiger Conover . . .	C. . . .	Clinton, N. J. . . .	206 McC.
Joseph Royer Conrad	C. . . .	. . . . .	319 McC.
Paul Darwin Cook	E. M. . .	Merryall	317 McC.
Welling Thomas Cook	C. . . .	Merryall	317 McC.
John Horn Cooper	C. E. . .	Easton	200 Burke St.
John McGill Cooper	G. S. . .	West Philadelphia . . .	24 S.
Charles Matthew Coxe	L. . . .	Wilkesbarre	51 S.
John Paul Cranston	E. E. . .	Newport, Del.	D. K. E.
Paul Hume Crawford	L. . . .	Crafton	D. K. E.
William Sloan Creveling . .	E. E. . .	Bloomsburg, N. J. . . .	49 S.
Edwin Howard Dalrymple, C. E.	. . . .	Phillipsburg, N. J. . . .	224 Washington St.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
William Oswill Dennis . . .	C. E.	Nazareth	116 M.
Henry Copp Edgar	C. . .	Easton	143 Bushkill.
George Joseph Edmunds . .	E. E.	Mayfield	94 McK.
Charles Mortimer Elliott . .	L. . .	Mansfield	200 McC.
John Theodore English . . .	L. . .	Elizabeth	129 M.
Thomas Franklin Eynon . . .	G. S.	Scranton	213 Cattell.
John Frederick Farquhar . .	E. E.	Bethlehem	
		36 Centre St., B'm.	
Edward Franklin Farquhar, C. . .		Bethlehem	
		36 Centre St., B'm.	
Thomas Edward Fatzinger, C. E.		Weaversville	113 McK.
George Herman Fickes . . .	L. . .	Mt. Rock	130 McC.
Nathaniel Guiley Finch . . .	C. E.	Allentown	413 Centre.
Eugene Bruce Ford	C. E.	Laceyville	608 New.
John Jones Fosselman . . .	L. . .	Donally Mills	154 E.
Robert Thomas Fox	L. . .	Downingtown	405 Burke St.
Robert Scott Galbreath . . .	C. . .	Chestnut Level	328 McC.
James McDowell Gilland . . .	E. E.	Shamokin	D. K. E.
Walter Aiken Godcharles . .	G. S.	Milton	200 McC.
Henry Beaumont Greensted	Ch. . .	Scranton	162 E.
Walter Bohrer Guy	L. . .	Washington, D. C.	59 S.
Karl Mutchler Hammann . . .	C. E.	Easton	1136 Northampton.
Claude Corden Harding . . .	C. E.	Wellsboro	228 McC.
Frederick Zeller Hartzell . .	C. . .	Easton	
		31 Nesquehoning St., S. S.	
Lester Cleveland Hawk . . .	L. . .	Bloomsbury, N. J.	49 S.
George Ralph Hendrickson, C. . .		Belvidere, N. J.	Belvidere.
James Dewitt Hill, Jr. . . .	C. E.	Scottdale	100 McK.
Horace Rogan Hoffman . . .	C. . .	Olney	50 S.
Winford Bishop Hornbaker, Ch. . .		Scranton	230 Cattell St.
George Howorth	L. . .	Wilkesbarre	72 Blair.
Ross Strominger Hubley . . .	C. E.	Harrisburg	128 M.
Thomas D. Irwin	L. . .	Huntingdon	101 McC. St.
George Jackson, Jr.	Ch. . .	Little Falls, N. J.	81 N.
William James	L. . .	Easton	1305 Washington St.
John Lewis Jones	L. . .	Bangor	229 McC.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Wallace Montgomery Keely, C. . . .		East Greenville	130 M.
William Neely Keith C. . . .		Newtown	90 N.
Christian Arthur Schultz			
Kemper C. . . .		Easton	225 N. 10th.
Charles Brearley Kennedy, E. E. .		Trenton, N. J.	26 S.
John Henry Kinter L. . . .		Chambersburg	D. K. E.
William Huntington Kirkpatrick	C. . . .	Easton.	20 N. 3d St.
George Albert Knapp C. E. .		Baltimore, Md.	21 S.
Frederich Gaston Kolb C. . . .		San Paulo, Brazil . . .	43 McC.
Rudolf Heinrich Kudlich, . C. E. .		Drifton	230 McC.
Otis Floyd Lamson † L. . . .		Victor, Col.	91 McK.
Albert Moore Lane † C. . . .		Duncannon	154 E.
Dudley Eugene Latham L. . . .		Weatherly	608 New St.
Morris Robert Henry Levin, E. E. .		Beverly, N. J.	49 McC.St.
Henry Metcalf Lewis E. E. .		Tunkhannock	108 McK.
Walter James Lowrie C. . . .		Strawberry Ridge . . .	31 S.
Tracy Day Luccock C. . . .		Washington, D. C. . . .	59 S.
J. Walter McIlhaney E. M. .		Easton	69 N. 2d St.
Henry McKeen, Jr. C. . . .		Easton	1254 Butler St.
Joseph Bolton Mackie C. . . .		Philadelphia	—
Joseph Pomeroy Maclay C. . . .		Chambersburg	118 McK.
Harry Pollock Martin G. S. .		New York City	108 Parsons.
Hervey Haman Mecklin C. . . .		French Camp, Miss.,	131 McC.
Robert Kline Melick C. E. .		Phillipsburg, N. J. . . .	257 Mercer St.
Owen Luther Mensch E. E. .		Jersey Shore	223 McC.
George Egbert Mensch E. E. .		Mifflinburg	319 McC.
Clyde Kennedy Miller L. . . .		Harmony, N. J. . . .	31 Nesquehoning.
Max Rockwell Mitchell E. M. .		Duluth, Minn. . . .	601 High.
John Knauss Montgomery . Ch. . . .		Hazleton	230 McC.
Ernest Joseph Mora E. E. .		New York City	49 McC.
Joseph Maynard Morgan . E. E. .		Washington, D. C. . . .	—
Oscar Louis Morgenstern C. E. .		Easton	826 Northampton.
Joseph Morrison C. E. .		Easton	614 Ferry.
William Edward Mosely L. . . .		Baltimore, Md.	133 M.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
James Lawson Nesbitt	C.	Colora, Md.	42 S.
Samuel Williamson Nevin	Ch.	Easton . 720 Paxinosa Ave.	
John Frederic Osterstock	Ch.	Easton	216 Ferry St.
Walter Winfield Peacock	E. M.	Mt. Airy	137 F.
Walter Leon Peake	L.	Wellsboro	228 McC.
David Wendell Phillips	C.	Scranton	213 Cattell St.
Darwin Crawford Pomeroy	E. E.	Port Royal	92 McK.
Ray Connor Pursell	L.	Easton	Sullivan St.
Burt Rabbitts	L.	Springfield, Ohio	150 P.
Clarence Oscar Rasely	C. E.	East Bangor	206 McC.
Arthur Llewellyn Raub	C. E.	Easton	300 S. 7th.
Douglass Wyman Reeder	L.	Easton	59 N. 3d St.
Harry Reese	E. E.	Wilkesbarre	15 S.
Ray James Garfield Ritter	E. E.	Allentown	129 M.
Herbert Hunphin Robertson	L.	Pittsburgh	148 P.
Warren Adams Roe	L.	Newark, N. J.	D. K. E.
Edward Irving Rogers	E. E.	Washington, N. J.,	305 Cattell.
Frank Hannam Ronk	C.	West Chester	176 E.
Carmon Ross	L.	Pen Argyl	319 McC.
Leigh Harley Rouzer, Jr.	E. M.	City of Mexico	75 K.
Harry Herbert Ruef	Ch.	Poughkeepsie, N. Y.	132 M.
William John Schwartz	E. E.	Hazleton	230 McC.
Ralph English Seaman †	Ch.	Perth Amboy, N. J., 405 Burke St.	
Howard A. Seipt	C.	Worcester	230 Cattell St.
Jehiel Edward Shewell	C.	Phillipsburg, N. J.,	258 Mercer.
William Robert Shimer	C. E.	Easton	Paxinosa Ave.
William Grant Showman	L.	Mt. Pleasant	305 Cattell St.
George Allan Sigman	L.	West Chester	115 McK.
James Sigman	L.	West Chester	115 McK.
Harry Silas Sisk	G. S.	Factoryville	—
Earle Clifford Smith	C. E.	Williamson School	152 P.
Frank Seltzer Smith	E. M.	Philadelphia	73 K.
Gustave Frederick Smith	E. E.	Honesdale	41 McC.
Mark Reeves Sooy, Jr.	L.	Mt. Holly, N. J.	89 N.
Ambrose L. Spencer, Jr.	L.	Scranton	121 McK.
Frank Wells Stewart, Jr.	C.	Easton	111 N. 4th St.

NAME.	COURSE OF STUDY.	RESIDENCE.	ROOM.
Claude Payson Stocker . . .	E. E. .	Jermyn	—
James Herbert Sweet . . .	E. M. .	Saxton	145 P.
Alfred David Thomas . . .	C. . .	Hazleton	229 McC.
Floyd Ashley Thomas . . .	L. . .	Easton	Home.
Franklin Clark Thompson .	L. . .	Washington, N. J. .	Home.
Chester Daniel Trumbauer .	C. E. .	Easton	337 Porter St.
Charles Nesbitt Ulrich . .	L. . .	Catasauqua	109 McK.
Martin Richard Van Duyne.	E. E. .	Boonton, N. J. . . .	56 S.
George Alfred Walter . . .	Ch . .	Scranton	162 E.
Howard Paul Wanner . . .	E. M. .	Kutztown	305 Cattell St.
Mark Hamilton Watson . .	G. S. .	Indiana	40 Cattell St.
Lee Spangler White . . .	G. S. .	Braddock	80 N.
William Kearns Wightman .	C. E. .	Pittsburgh	94 McK.
Philip Francis Williams . .	L. . .	Martin's Ferry, Ohio .	49 S.
John Hunt Wilson	Ch. . .	Easton	531 Cattell St.
Leo Earl Wilt	C. E. .	Towanda	15 S.
Louis Frederick Wilzin . .	L. . .	Greenville, Miss. . .	98 McK.
Harlan Edgar Woehrle . . .	E. E. .	Easton	642 Walnut St.
Joshua Riegel Yeager . . .	Cl. . .	Philadelphia	147 P.
Harley Paul Yeisley . . .	Cl. . .	Nazareth	Home.
Frank Yocum	C. E. .	Reading	93 McK.
Henry Sherwood Young . .	L. . .	Easton	607 Paxinosa Ave.
Conrad Wm. Zimmerman, Jr.	E. E. .	Cumberland, Md. . .	101 McC.

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SUMMARY.

GRADUATE STUDENTS	16
UNDERGRADUATES {	Seniors 57
	Juniors 78
	Sophomores 112
	Freshmen 156
Total	419

COURSES OF STUDY.

Graduate Courses	16	Civil Engineering	66
Classical	122	Electrical Engineering . .	41
Latin Scientific	109	Mining Engineering . . .	17
General Scientific	14	Chemical	34

CLASSIFICATION BY RESIDENCE.

Colorado	1	Minnesota	3	South Dakota . .	1
Connecticut . . .	1	Mississippi	2	Texas	2
Delaware	5	Missouri	1	West Virginia .	1
District of Co-		New Jersey . . .	56	Brazil	1
lumbia	3	New York	24	England	1
Iowa	2	Ohio	4	Mexico	2
Kentucky	1	Pennsylvania .	296		
Maryland	11	South Carolina .	1		

ABBREVIATIONS OF ROOMS AND COURSES OF STUDY.

B.—Blair Hall.	E.—East Hall.	F.—Fayerweather Hall.
K.—Knox Hall.	M.—Martien Hall.	McC.—McCartney St.
McK.—McKeen Hall.	N.—Newkirk Hall.	P.—Powell Hall.
S.—South College.	D. K. E.—Fraternity House.	
C.—Classical.	E. M.—Mining Engineering.	
C. E.—Civil Engineering.	G. S.—General Scientific.	
Ch.—Chemical.	L.—Latin Scientific.	
E. E.—Electrical Engineering.		

† Partial course; not candidates for a degree.

‡ Permitted to recite; not candidates for a degree.

— Absent by permission.

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